seminar

GATHERING HIMALAYA

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a journal which seeks to reflect through free discussion, every shade of Indian thought and aspiration. Each month, a single problem is debated by writers belonging to different persuasions. Opinions expressed have ranged from janata to congress, from sarvodaya to communist to independent. And the non-political specialist too has voiced his views. In this way it has been possible to answer a real need of today, to gather the facts and ideas of this age and to help thinking people arrive at a certain degree of cohesion and clarity in facing the problems of economics, of politics, of culture.

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addressing the challenges facing

the mountains and its people

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The problem

INDIAN mythology and the Himalaya are interwoven because both Hinduism and Buddhism deeply revere this mountain range. Himalaya means 'abode of snow', and is imagined as the land of Shiva, a powerful deity in the Hindu religious pantheon who embodies the aspect of the destroyer in the trinity – Brahma, Vishu, Shiva. It is believed that Shiva resides in Mount Kailash in Tibet. The Buddhist yogi, Milarepa, meditated in a cave in this mountain to attain enlightenment.

Another mythological event that is deeply ingrained in the cultural psyche is the act of Bhagiratha praying for thousands of years to expiate the sins of sixty thousand of his relatives who had perished under the curse of a great sage that they had wronged. Ganga, residing in heaven was unwilling to descend to earth. Ordered by Brahma, Ganga was compelled to descend to earth on the '*jata'*, the matted dreadlocks, of Shiva's head. This aspect of the birth of the river that was earlier called Bhagirathi, then became Ganga. The river flows across 2500 kilometres to eventually enter the Bay of Bengal. Iconic pilgrimage centres, from times immemorial, like Hardwar and Banaras, sit on the banks of the Ganga along its course.

Blocking the monsoon winds brings precipitation to vast parts of the Indo-Gangetic plains. Equally, the melting glaciers in the Himalaya feed into the Indus and Ganga basins, providing water to perennial rivers. That was the basis of the prosperity along the course of rivers since the time of the Indus Valley Civilization. The Himalaya shapes the destiny of India and is a natural barrier that has to be confronted by invading armies. It formed a natural barrier between mainland China and the East Asian countries. The Turks and Persians invaded the subcontinent by coming through the narrow Khyber Pass to conquer Delhi. There were other passes across this mountain range that established the Spice and Silk Routes. However, these passages were open only for short periods during the summer. In winter, heavy snowfall literally cut-off India from the world.

Before the drawing of national boundaries, borders were porous, and people moved across these mountain ranges and pastures with their livestock; for trade and communication; for socio-cultural exchanges that led to the rooting of multicultural values. The disruption of this seamless movement began in the latter part of the 20th century as colonial powers started drawing boundaries to meet the economic aspirations of the British Empire. In the postcolonial period, the concept of national boundaries across the Himalaya increasingly became rigid as territorial integrity became more important for India and China which resulted in assertions to claim their territories.

Travelling across the Himalaya reveals an astonishing diversity in topography and the natural habitat, ranging from the cold dry semi-desert of Ladakh and Lahaul-Spiti in the west, to Arunachal in the east with its high precipitation for the better part of the year nurturing the unique tropical forests. At the tri-junction of India, China and Myanmar one experiences a rare view of the vast tropical forests merging with high snow-clad Himalayan peaks. Similarly, the religious, cultural and language diversity is like no other in the world.

From Mount Kailas to Mansarovar in Tibet, from the Amarnath Cave in Kashmir to the four '*dhams*', or pilgrimage centres, of Gangotri, Yamunotri, Kedarnath and Badrinath, are all an intrinsic part of the Hindu psyche, attracting those seeking knowledge and spirituality. They have come over millennia to this snow-clad region to meditate in pristine solitude. Traditionally, devout pilgrims would follow the pastoral route and trek through these remote areas, bracing the harsh realities of life, seeking spiritual exposure along the way. For centuries men, women and children have walked these routes, enduring the many hardships. The journey encompassed a spirituality but was also a time to reflect on the wonders of nature, become one with the environment and therefore with oneself, all with a sense of reverence and gratitude towards the local people who extended their hospitality in the land of the Gods, '*daiva bhoomi*'.

Roads and modern transport transformed the pilgrim into being a 'tourist'. Mass tourism has rampaged across this fragile region, converting spiritual spaces into commercial ventures, hijacked by the fake god-men devoid of any reverence for the mighty Himalaya. Arduous trekking has been replaced by private transport. Some who cannot complete the walk are carried on the backs of porters to reach the sanctum and earn their '*punya*'.

I have walked, on foot, to all these pilgrimage centres during my youth. The journeys were magical as I crossed the great Himalayan range and entered the Tibetan plateau. The crest line where I entered was the Lipu Lekh pass, leaving behind the snow-clad peaks. It was surreal, as the clouds dissolved into thin air, and on the other side the plateau, with luminous colours streaked under a deep blue sky, the sunlit, snow covered slopes, blinded me with their radiance. The purple hues of the mountains etched against the clear sky, transports one beyond the self, and a profound feeling of space and the cosmos unfolds. This extraordinary reality cannot be experienced or absorbed if one drives by car or chopper into the area.

My first exposure to the Kashmir Valley was in late seventies, when it was still *zannat*, heaven on earth, with an unspoilt landscape, snow-clad peaks, gushing rivers and sparkling springs. Hiking to Amaranth with the help of shepherds, the Bakarwals, staying with them in their tents, eating fresh milk produce from their livestock, was a lifetimes experience. Travelling beyond to Kargil, crossing the Zojila Pass perched on a petrol tanker, was a thrilling adventure for the spirit. The bare and rugged mountains with their diverse colours, the deep valleys, and then onto Leh, at a time when there were few travellers and the facilities were sparse to say the least, was memorable. I travelled to Hemis and to other gompas that hosted the various seasonal festivals.

At the time, there were no tensions across the border with China and the army was beginning to set-up camp in the area. I returned to the valley four decades later in 2021 to visit zannat again. The 'haven' had literally been turned into 'hell'. I could barely recognize the Srinagar of my first visit to the city. Barbed wire and military convoys were at every corner. It looked like a war zone. Exiting the airport was like

leaving a military fortress. There were security personnel standing with machine guns at short intervals. Despite that, there were hordes of tourists coming to the valley for short vacations, without any understanding of the ground realities. They were there to savour the beauty of the Kashmir Valley.

The Chipko movement that originated in the Himalaya, galvanized environmental consciousness across the country and was internationally acclaimed as a grassroots, people's movement, working to claim equitable rights over natural resources and also set an agenda to conserve and preserve the ecology of the fragile Himalaya. It raised a strong voice against the massive, unthinking technological interventions of road and dam projects.

Though it was initially a movement against the allocation of trees for industrial use, to claim rights over resources, it gradually realized the futility of the exploitative nature of forestry, even by local communities, and eventually put forth the ecological position that propagated the conservation of the soil, water and air, defined as the capital of humankind. This evolution from the economy to ecology remains the core strength of the movement that learned from the grassroots. The Chipko struggle was led by the women of the villages.

Though the moratorium on felling of green trees above 1000 metres in Uttarakhand was an achievement of the Chipko agitation, its leaders like Sunderlal Bahuguna recognized the need to spread this ecological message across the Himalayan range. This led to the historical Kashmir-Kohima *padyatra*, a foot march covering 4800 kms across high mountain ranges, spanning over three years, from 1979 to 1982. It was a pioneering attempt to understand the ground realities faced by local populations with larger regional agendas, to look at the Himalaya as a holistic mountain range. This long march created greater awareness among the people as well as with policy makers, on how to use the natural resources of this fragile region.

Many apprehensions of the movement were proven correct when the Kedarnath disaster in 2013 and 2021 in Chamoli took hundreds of lives and damaged gigantic man-made structures, like the dams that were washed off, downstream. It was in Reni, in the Chamoli district, that the Chipko movement was born, and where Gaura Devi heralded the call to hug the individual trees and protect the forests. By either sheer coincidence or design, the same village was wiped out during the floods. Ironically, when the villagers filed a PIL against the hydropower company, holding it responsible for the disaster, the High Court bench at Dehradun dismissed the petition calling it motivated and alleging that five of the petitioners were puppets in the hands of an unknown puppeteer. The court also questioned the *bona fide* of the petitioners and imposed a fine of ten thousand rupees on each of the five villagers.

Ironically, this order went against an earlier one passed by the same High Court in 2017, that had accorded the status of 'living human entities' to the Ganga and Yamuna Rivers, inclusive of the glaciers, streams, meadows, jungles, springs and waterfalls, in an effort to conserve them. This was a denial of the fundamental rights of the villagers to protect their environment.

Building highways across the Himalaya, in the Tibetan plateau, is easier because the terrain is plain with hard rock formations. In contrast, any attempt to construct wider roads along the border on the Indian side, has to address the problem of weak sedimentary rock as well as steep slopes that makes any structure susceptible to frequent landslides and almost impossible to repair at short notice during emergencies of war or disasters.

India is widening roads along the border, which might work against the basic purpose of providing security. Resilience is a unique characteristic of the Himalayan people. Women of the Chipko movement have successfully regenerated thousands of hectares of oak forests in the high ranges of Uttarkashi in Uttarakhand. It is mesmerizing to see vast stretches of green along the catchment of streams and rivers that produce the best mineral water in the Himalaya. The ingenuity of communities in the eastern Himalaya to cultivate diverse varieties of paddy using different water temperatures that flow down from the mountains, is unique and shows the depth of understanding that these communities have of the natural forces and also of the evolution of indigenous knowledge to husband seeds and skills in an effort to grow crops in a hostile topography. The Apatani people in Arunachal Pradesh practice sustainable agricultural and forestry that is hugely productive in the hill regions. UNESCO has recognized this as world heritage.

Diversity is a way of life in the Himalaya. It reduces the pressure on local resources, spreading the risks evenly that allows the people sustainable livelihood opportunities. There are numerous examples of this latent strength within the local communities of the Himalaya, and state governments need to recognize this strength. Food is the pillar on which local health and

nutrition is built in the Himalayan region. The Wazwan, the Kashmiri range of dishes, is enriched by the 'shah zeera', the wild cumin, grown in Gurez Valley along the border of Pakistan occupied Kashmir. Leh is famous for its apricots and millet. Similarly, apples from Kashmir and Himachal are famous for their distinct flavour and texture.

These mountain ranges are important migratory routes, like the Silk Road, and have nurtured diverse agricultural and foraging practices based on the local biodiversity. Drying, smoking, grinding, and fermenting food is integral to prolong shelf life. This has resulted in the evolution of unique food and gastronomical cultures from the western Himalaya to the eastern regions of Sikkim, Bhutan and Arunachal Pradesh. Apong, poka and chaang are local drinks that are part of tribal rituals in the north-eastern region. However, in recent years the fast food culture is taking root. The demographic changes taking place are influencing what the people eat, mimicking the food cultures of mainland India, devoid of nutrition. Saffron and almonds, synonymous with Kashmir, are gradually being lost due to climate change and its impact on agriculture. The use of chemical pesticides is depleting nutrients in the soil and affecting the quality of water.

The Himalaya is home to many languages across Tibet, Nepal and India. In an attempt to establish a dominant national language, many indigenous languages are getting eroded and forgotten. Language determines culture, and this dilution has led to cultural loss, and an extinction of indigenous knowledge systems and skills that are essential to navigate the harsh hill terrain of the Himalaya.

The geopolitics of the Himalayan region stamps a huge footprint on the local economy, ecology and culture unleashing a 'slow violence' that could destabilize the region. The mountains, especially the snow-clad peaks, deep valleys and rugged landscape make for a perfect destination for people to unwind. The Himalaya has all these assets. Add to this the spiritual aspect of Hinduism and Buddhism that makes the region doubly potent as a place to visit. Because of its fragile nature and layered diversity, responsible tourism is essential to minimize the potential negative impact, and help in providing a sustainable pathway for the hill people.

Himalayan geopolitics, particularly since the 1990s, has accelerated the pace of militarization across the contested borders between India and China. Massive infrastructure projects including road building and dam construction have resulted in an accelerated degradation of an already fragile ecology. The Himalaya is a shared legacy of an integrated transboundary ecological system, and countries on either side need to ensure its protection through international dialogue.

With the strengthening of the economies of both China and India, and the reinforcement of their military and strategic interests, and the lingering tensions in Ladakh and Arunachal Pradesh, the ensuing political tensions in Beijing and New Delhi have negatively impacted local communities across borders resulting in the closure of traditional trade routes and highland passes. This has taken its toll on the local economies, disrupting the social and economic fabric of these people with centuries-old systems that existed uninterrupted suddenly being diluted.

For both China and India, the Himalaya is much more than just a physical mountain range. Mighty civilizations have evolved on the banks of rivers that originated from the snow-clad peaks and glaciers. The survival of millions of people in the most populated regions of China and India are linked to the stability of the Himalayan ecosystem. This is the base for the mystical and spiritual qualities attached to the Himalaya, aptly called the abode of Shiva the creator. Unfortunately, the developments in the late 20th and 21st centuries, has accelerated the pace of breaking this link, with technological interventions, inhibiting these mountains. The future of the Himalaya is closely linked to the most populous religions in the world, Hinduism and Buddhism. The land of Shiva is in control of communist China, and there is a sense of concern about the future of Tibet. Who will select the Dalai Lama and who will determine the future of Buddhism.

The Himalaya needs to be deemed as a world heritage site, the Third Pole. It has the largest deposit of ice and snow after Antarctica and the Arctic. It has 15000 glaciers, with Siachen as the longest, 72 kms in length. The fast withering away of this third pole has become a reality as these regions face the impact of climate change twice that of the global averages. The regular recurrence of floods, landslides and droughts in these fragile regions is a clear indicator of the failure of past and present polices across nations, and political ideologies. Will the concerned governments across the region initiate a dialogue to facilitate a Himalayan Convention to devise a comprehensive policy of conservation and preservation of this treasure?

PANDURANG HEGDE

Centrality of Himalaya to South Asian lives

SHEKHAR PATHAK

HIMALAYA is home to a geo-geographical-biological diversity and a multitude of human concerns and constructs. The ecology evolved by this mountain has become the basis for the existence of the natural as well as socio-cultural systems of South Asia. This 'subcontinental arc' is dynamic and active. It connects the tropical rainforests of Myanmar; Arunachal with the cold semi-desert of Ladakh, and the North Indian plains with the Tibetan Plateau making it different from other mountain systems. In this vast and diverse geography, the Himalaya is spread over eight Asian countries – Afghanistan, Bangladesh, Bhutan, China-Tibet, India, Myanmar, Nepal and Pakistan. The 11 (+2 partly) Indian provinces are Arunachal, Himachal, J.K., Ladakh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttarakhand (and hill districts of West Bengal and Assam).

Its rich soil and water amazingly transform the landscape and human life in the plains. Its communities and their cultures, which arrived and settled over millennia, have in turn spread out in many directions. Its geography is akin to the myriad faces of nature. Its glaciers and rivers are called the 'water towers' for the 21st century. Its lofty peaks make a formidable barrier for the monsoon from the southern side resulting in heavy rainfall while holding back and tempering the cold waves from the north. This mountain indeed controls the climate of South Asia.

Its vegetation and forests, like green lungs, absorb the rising atmospheric carbon. While its wilderness, a confluence of natural and spiritual energies, has given vent to a plethora of flora and fauna. Its natural beauty and tranquillity have inspired and captivated millions, including some of the greatest human beings who ever lived. The abundance of a multiplicity of raw material provides the basis for mineral, metallurgical, oil, timber, woollen and medicinal industries. The snow covered peaks and passes, glacial vistas and blue sky fascinate and beckon the adventurer and explorer.

Today the resources and potentials of the Himalaya are being extracted and destroyed at an unsustainable rate, way beyond what can be regenerated. Hydroelectric projects, unscientific road building, mining, pressure on biodiversity, out-migration of communities, rapid

urbanization along with the impact of globalization, privatization, consumerism, corporatization and climate change are serious concerns, with deep implications for the future of the Himalaya.

With an avoidance of democratic debate, dilution of environmental/EIA laws marked by the state's allergy for the recommendations of various commissions and committees (the latest being two HPCs constituted by the Supreme Court and headed by Ravi Chopra) on the Himalaya and sidelining of communities, this highest and most sacred mountain range on earth has been hijacked by an inadequate model of development fabricated by our political economy. The biggest challenge facing mountain communities is to maintain their dignity and self-respect, while retaining their right to live in their territories. The overall pressure generated by state systems and its allies is more violent towards women, children, dalits and Adivasis. Sometime the judiciary (the last hope for justice) fails itself and the Himalayan cause. Without realizing the ecological centrality of Himalaya, neither its uniqueness nor its association with our common future can be understood.

Today, the Himalaya is considered a natural-cultural heritage of all humanity, but this fact has resonated in the minds of different Asian societies for a very long time. Within the verticality and horizontality of Himalaya this vibrant rhythm belongs to thousands of peaks and glaciers, to innumerable rocks and their faults and thrusts as well as to the inherent geo-energy manifest as earthquakes, landslides and thermal springs. It belongs to the lakes, streams, flora and fauna; to the human beings representing hundreds of communities and cultures. Several faiths have been nurtured here and it has also been an ideal place for myths and dreams. Before getting bound up in the faiths and beliefs of humans, their political and economic systems, its vibrant rhythm is the expression of a highly dynamic geology, and a geography that still rises as it flows down.

By itself, this is an expression of the natural processes at work in the Himalaya; our political and economic set-up, which has given rise to an indifferent, unrelenting modern civilization, has helped accelerate and multiply the contributing factors. Nonetheless, the natural beauty and splendour of the Himalaya glows unabated. Himalaya, like nature itself, is well versed in the art of self-healing and regeneration but only to an extent.

The presence of the Himalaya in the consciousness of various Asian societies has been vividly described in their myths, folklore and literatures. Its natural beauty, complexity and a rich mythic tradition has provided home to many pilgrim destinations. Various societies and cultures have settled and thrived here; while some have preferred an interactive existence, others have chosen a more isolated identity. Perhaps this is the reason why the Himalaya is unparalleled in terms of natural and human diversity.

Different stages of socioeconomic development can be seen here. While animal husbandry is actively practiced in the mountains and agriculture in the valleys, the barter system of trade spreads across the Himalaya. This has led to the creation of distinct social, cultural and economic systems in different eco-regions containing elements brought in by different constitutive communities. Being a melting pot of several ethnic groups, a conjunction of different political systems, a region where most of the linguistic families of the world exist and a region which is also geopolitically very important, it is natural that we ought to understand it deeply and comprehensively by engaging with all its aspects.

The process of habitation and migration of human groups in the Himalaya is an interesting one. It is still not clear as to how ancient communities struggled, compromised and assimilated after arriving here. During this process, each community tried to learn from and understand the others. They constructed their cultures, developed economic activities and experimented with the arts and sciences. Thus, practices such as agriculture, animal husbandry, harnessing water for milling, irrigational systems, mining and metallurgy, transportation and bridge making, vernacular architecture, sculpture and the art of mask-making among others, were developed under the special ecological and geopolitical constraints of the region.

Today, when we look at different communities of the Himalaya, their presence indicates a narrative of a variety of human contacts and rich social engagements. Here they tried to create while also absorbing different religious beliefs and myths they encountered, thus giving themselves a distinct identity in the form of folk traditions. The Hindu, Bon, Buddhist, Jain, Christian, Islamic and Sikh traditions have certainly associated themselves with the Himalaya due to its unique natural attraction. Many old and mutually disparate societies and cultures have existed here. This intense proximity between historical tradition and myths is clearly visible. Mountains like Chomolangma and Nanda Devi stand both for myth and reality. Before being embodied as

peaks, the identity of both is that of local Mother Goddess.

Buddhist monasteries in the inner Himalaya spread from Afghanistan to Myanmar are markers of a living tradition. This Buddhist strip is connected to Tibet both culturally and geographically and thus present on both sides of the highest summits. Old memorials, dating back to more than a thousand years, are present there. The Bamiyan Buddha, the ruins at Takshshila, various monasteries-monuments and forts in Ladakh, Himachal, Nepal, Sikkim, Bhutan and Arunachal bear evidence of a transboundary historical past of more than a thousand years. In Uttarakhand, apart from the small Jad community, the Tibetans who came with the H.H. Dalai Lama have maintained a Buddhist presence.

Folk deities have an abiding attractive tradition independent of the pan-Asian Gods and Goddesses. In fact, the diversity of folk deities is inherently linked to the human and natural diversity of the Himalaya. The places which were constituted as pilgrim centres through practice of culture and belief systems continue to be the most beautiful places. This fact also illustrates the aesthetic sense of ancestors and their belief in the purity and power of pristine wilderness.

The compulsions of religions often divide society by branding mankind as Hindu, Buddhist, Jain, Parsi, Christian or Muslims. However, it has not been successful in the Himalaya and despite this psycho-religious apparatus, a specific and shared socio-cultural identity developed. The interdependence of communities is visible all over the Himalaya. In the Kailas region of western Tibet ancient Bonpos, Hindus, Buddhists, Jains, Sikhs along with modern tourists travel together and participate in its circumam-bulation (*pradakshina*/*parikrama*). This region is indeed a unique multicultural destination. Here, neither are we witness to a scene like Ayodhya nor like that of Jerusalem. In fact, it is a unique illustration of the original unity of humankind.

The Himalaya has several tribes and ethnic groups who have their own autonomous worlds comprising of a little bit of everything. This has helped them maintain their diversity, specificity and their inter-relations intact. The most surprising and important fact is that the primary concern of the Gujjars, Sherpas, Banarajis, Brokpas, Drokpas, Lepchas like that of many tribes of the northwest and northeast borders, is still with nature and not with any institutionalized religion. Close to the Vaishnavite traditions of Manipur stand the rich tribal traditions of the Nagas and Kukis. A little further are the borders of Arunachal, Tibet and Myanmar where Buddhist culture is still alive.

The transformation of the Pandavas and Kauravas into folk gods has only been possible in the Himalaya. The first Jain Tirthankar, Rishabhdev (Adinath) breathed his last at Ashtapaad near Mt. Kailas, while Adi Shankaracharya extensively toured Uttarakhand and Kashmir. Nanak travelled in Himalaya-Tibet and the tradition of Gorakhnath still thrives in many places. Buddhist preachers as well as explorers travelled back and forth many times in the Himalaya.

The various small societies and cultures are correlated despite being unknown to each other. Festivals, fairs, songs, dances, musical instruments, implements and social systems are part of this heritage. Different forms of traditional knowledge exist here and those of relationships, manners and traditions. While some communities accept polyandry, others follow polygamy. Widow re-marriage is prevalent in some communities but impossible in others. In the Naga areas the custom of 'head hunting' was practised till the middle of the 20th century. There are customs of burial at some places, cremation at others and feeding the corpses to birds (known as 'sky burials') at yet other places. Despite an east-west geographical continuity of the entire Himalaya, north-south social, economic and ecological relations are strongly prevalent too.

Many layers of humanity can be read and recognized in the Himalaya; while some have been lost others remain hidden. The languages and dialects, arts (through colour, paper, cloth, clay, stone, metal, wood, and fibre) and other socio-cultural etiquettes have developed amidst these lifestyles. To understand Himalayan culture and its relations with the rest of Asia, it is necessary to understand the tradition of pilgrimage among Bonpas, Hindus, Buddhists, Jains, Muslims and Sikhs. The old oral traditions have entered the realm of writing in the last two hundred years. Yet, oral traditions have remained dynamic. It is to be understood that oral expressions can fly while written texts only walk.

Like any mountain range, the Himalaya is home to natural resources. This ecological heritage has been in constant use by societies of hunters, nomads, pastoralists, artisans, agriculturists, non-residents and traders to the present-day, with little likelihood of its stopping in the foreseeable future. While the colonial regime had declared these 'life resources' to be 'goods', the open market economy approach of multinational corporations has turned them into 'commodities'. In this way

the resources, raw or finished, have become silent victims of a relentless institutionalized plunder. That's why the Himalaya, like other remote regions of the country, has been plagued and tormented by an internal colonialism.

Land, forests, water, humans, animals and wilderness are the resources of the Himalaya. They are at the same time the basis of ecology. Land (soil, minerals, metals and hydrocarbons) is the mother resource and bears the pastures, forests, farms, rivers, glaciers and lakes. The Himalaya has bestowed soil, fertility and water upon northern India, but man's short-sightedness has hastened the depletion of the soil. Soil saves us from being reduced to soil. In fact, most of the social and ecological movements of the Himalaya are centred around saving the soil. Chipko may be well known but anti-dam, anti-mining and movements for local self-government and autonomy are part of a larger narrative.

Water is other important resource. It quenches our thirst and is used for water milling and irrigation. The energy flowing in it can be captured and commoditized. The consumerist mindset or the capitalist's guile can merely envision dams like Tehri, or the business of water packaged in plastic. They will neither dwell on the future of fish nor be concerned about the fate of ordinary humans. Meanwhile the construction of a series of dams continues throughout the Himalaya, without any 'honest' cost-benefit analysis and proper assessment of the geo-tectonics, seismic-gap areas, general scene of the catchments and the consequences of such interventions.

The small-scale but sustainable and successful efforts of our ancestors for the conservation and wise use of water and snow, practised for thousands of years, cannot be rejected as 'traditional knowledge systems' when they are as meaningful today as ever. Some are even pushing for the 'linking of the rivers' without knowing and respecting the right of the river to flow and what this right really mean.

The three river systems (seven others are equally important) originating in the Himalaya and Tibet are the Indus, Ganga and Brahmaputra, making up 4.28, 25 and 33.71 per cent respectively by volume of India's river water and drain 9.8, 26 and 7.8 per cent respectively of India's total area. In this way their combined basin is 43.8 per cent of India's total surface area, and supply 63 per cent of India's fresh water. These rivers are the lifelines of the north of the Indian subcontinent. All these lead rivers and their tributaries flow in two to four countries. The Ganga basin is spread in five ecoregions, four countries and 11 Indian states covering a large area (861404 sq km) and 79.3 per cent of this basin falls in India. Nepal is completely in its catchment area. The total population living in this large basin is around 700 million (530 million in 2011 and 448 million in 2001).

The 'water towers' are also linked with the forests. I call them 'green glaciers'. Hunting and collecting, livestock and agriculture, craft and cottage industries, traditional medicines and trade are all supported by the forests. Forests are critical to the formation and retention of soil and fill the lives of people with song, music, journeys and a range of artefacts and implements. They are home to animals and birds. They make possible the extent of biological diversity, which has many dimensions to it. The rarest of flora and fauna can be found here. Some species are already extinct and many others threatened. Simply put, Himalaya occupies 0.3 per cent of the planet area, while making up to 10 per cent of its biodiversity, to which agricultural diversity is closely linked. If we have 'baranaza' (12 grains) system of agriculture in Uttarakhand, we still have 'atharanaza' (18 grains and some non-grains) method in far West Nepal. In India's Northeast, jhoom cultivation is associated with diversity.

Humans in the Himalaya are a resource and at the same time consumers of all other resources. On the other hand, the wild animals are linked to forests, rangelands and to biodiversity while domestic animals related to agriculture, transport and food systems. They can be termed as 'cash fauna'. If the population of the Himalayan region is estimated at over 70 million, the population of domestic animals may also be around 45-50 million. However, the resources of the Himalaya influence the lives of more than 700 million South Asians directly or indirectly.

Migration from the Himalaya must be understood, as also the tragedy behind ghost villages. For example, how should we approach and understand the concept of 'money order economy' today? While its meaning has changed within Uttarakhand, it remains a useful notion in understanding the out-migration in Nepal. Out migration may have some positive aspects but the darkness created by it in the Himalayan hinterland should be analysed and understood properly. Again, how to understand the forced migrations of Tibetans, Chakmas and Kashmiri Pundits (and Muslims too) from their respective lands? How should we analyse the migration of

labourers from Nepal, Bihar, Jharkhand and eastern Uttar Pradesh into remote and difficult areas of the Himalaya? We rarely acknowledged their contribution. Our prejudices with Kashmir and NE India are yet to be diluted.

The most special 'niche' resource of the Himalaya remains its 'wilderness', its natural beauty and tranquillity. This beauty isn't just about the peaks, glaciers, confluences, springs, lakes, valleys of flowers, forests and rivers-lakes considered by themselves but a combined and juxtaposed whole, much greater than the sum of its parts. This endless palette endows their vision with art and poetry, fills in the blank spaces of the modern mind and deconstructs monocultures of all kinds. This immeasurable beauty cannot be manufactured by nation-states or multinational companies and is the perpetual possession of the Himalaya. Pilgrimage and tourism are very dependent on this asset. A major part of this is associated with aesthetics and visual intensity.

The present scenario of the Himalaya therefore upsets one and this sadness is not only felt by more than 70 million Himalayan people, but it is part of a larger tragedy. Enclosed in this situation people nevertheless are fighting for their forests, soil, minerals, folk culture, and in a way, for their very identity. They have been gauging the conspiracies of supporters of big dams and captive tourism, the contractors of mines and their destructive methods, and the looters of land, minerals, resin, raisins, timber and herbs. They also realize the destruction of the Himalaya in the name of defence.

Many articulate sections of society are of the opinion that the Himalaya cannot be sustained and saved separately. Its environment is linked to its economy and this ultimately leads us to the question of political will in a national and international context. The societies of the Himalaya have protected themselves for centuries, but self-defence has become increasingly difficult today. They have historically engaged in warfare to establish and protect themselves from each other as also from competitive feudal powers. There could be some difference in the degree of endurance that different societies possess, but the human capacity to protest exists among all.

There was an overall decline of feudal powers in the Himalaya by the last decades of the 18th and early 19th century. Company rule had gradually extended to some parts of the Himalaya. In response, individual and collective resistance from the communities began and over time became stronger. Most of the social movements here were led by peasants and tribes. The forms and significance of resistance can be gauged by studying different revolts in the Himalayan regions. Struggles against feudal and colonial rule can be found in all parts of the Himalaya. The movement of the Nepali Congress and later the Maoist struggle may be placed in this context. It was an era which witnessed the emergence of many leaders and revolutionary heroes.

This tradition of protest did not cease even after independence in 1947. The resistance in both parts of Kashmir and in north-eastern India has repeatedly turned violent. Movements in Uttarakhand did not stop after independence. Mass movements finally brought democracy to Nepal. Movements are going on in Tibet and Bhutan as well. In such an atmosphere, sometimes there is a lull and at other times the situation can turns explosive. Nevertheless, it must be hoped that new movements lead to a deepening of democratic foundations. Bhutan has entered an era of constitutional monarchy. The very idea of GNH (Gross National Happiness) has emerged from this small Himalayan country.

The political and social systems of the Indian subcontinent have not been able to earn complete trust of these communities. Our centralized republics have yet to understand their decentralized lifestyles and consequently failed to develop the art of governance. The colonial government had at least the good sense to recognize them as 'non-regulation areas', but it was a cleverly crafted safety valve. The community-governed decentralized systems have yet to make up their minds to fully accept centralized democratic government systems. The northern areas of Pakistan, Indian Kashmir, Nepal, Nagaland, Manipur, Assam, among others, have continuously remained disturbed areas. In the last few years underground movements have emerged in Tripura and Meghalaya. The Kashmir issue has become more complicated after the abolition of Article 370. Despite many attempts, the powerful party has failed in giving good governance to the Himalayan states in recent years. Political corruption, purchasing of elected members, parts of the judiciary and national institutions carries on.

It must be remembered that if we thrust externally derived solutions on the issues of the Himalaya, it will only lead to more instability and unrest. In fact, such an understanding is the need of the hour. If the Himalaya and its resources are meant only for commercial exploitation, then neither the Himalaya nor the North Indian

plains will remain safe. There is no dearth of people from India and elsewhere who, on the one hand, willingly declare that the Himalaya is the highest symbol of human civilization and on the other, do not hesitate at all in destroying its natural wealth and cultural prosperity. In fact, it is these people who are running (controlling) the system.

What we need now is a steady middle path with long-term goals for the overall betterment of society and the fulfilment of our needs and not hasty frenzies of development which only benefit a few. Globalization, privatization of the commons and climatic changes are bound to directly impact the Himalaya. However, despite these processes, it will maintain its presence amidst us and continue to support our existence in various ways. The use of appropriate technology and people's participation is needed to save vanishing forests, polluted cities, and displaced people. Justice, equity and basic rights are all equally important.

Despite national and international resolutions on the Himalaya, the UN's 'Mountain Agenda' and many social-environmental movements, the truth is that the Himalaya is under siege from all sides and its resources are being looted. Modern civilization is shirking from facing this fact. However, we must realize that there is but one Himalaya and we cannot afford to lose it.

It should also be remembered that wisdom or understanding is neither available in the international market nor can it be developed by the Niti Aayog, World Bank or any multinational company. This realization and awareness already exists in the societies and communities of the Himalaya and other mountains. First, we must learn and imbibe it only from there; after that positive ideas can be taken from any corner of planet earth.

The northern yardstick

KANAK MANI DIXIT

IT is an extraordinary geological outcrop that enchants the world, but the Himalaya is not heard for what it could tell the people of Earth. East to west, the chain has geographical continuity but it's society is riven by geopolitics, nationalisms and north-south economics.

The Abode of the Gods, King of
Mountains, Himalaya
You bound the oceans from
east to west
A northern yardstick
To measure the Earth.
– Kalidas, from *Kumar Sumbhav*

The above stanza adorned the masthead of *Himal* magazine for years until the magazine transformed from a Himalayan to Southasian periodical. Without doubt, the Himalaya is one of the most distinctive features of our Earth, for both its elevation that dwarfs all the other great mountain ranges, its length of 1550 miles from Nanga Parbat (26,660 ft) to Namcha Barwa (25,445 ft), and the effervescent diversity in its natural history and human population.

If you go up any one of the hilltops surrounding Kathmandu Valley, which lies more or less at the centre of the Himalayan chain, in the run of mountains east to west you can see more than a third of Nepal. On a clear day, due to their elevation, the march of the Himalaya allows you to make out the curvature of the globe on the snowline. The matter of the sheer elevation of the Himalaya is hard to grasp – on a jet airplane over the Alps you fly far above the snows, whereas here you are astride the peaks.

Besides the elevation, it is the incline from ridgeline to plain that makes the range unique. From the summit of Mountain Everest – Chomolongma or Sagarmatha – at above 29,000 ft it is less than 80 miles

from the Ganga plain. The bulk of the region's population resides in the Mahabharat midhills which make up a slender midriff, though it does widen out westwards in Nepal and beyond into Uttarakhand and Himachal.

The chain is essentially one long and narrow ridgeline, created by the crumpling of rock strata as the Eurasian tectonic plate encountered the drifting Subcontinent. The Himalaya is correctly called the Third Pole, this 'polar region' unique because it is inhabited. Indeed, the Mahabharat midhills are the most densely populated mountain region in the world.

For being a primary defining feature of Earth, one that is human-inhabited to the seams, clearly the Himalaya would have a thing or two to say about global processes, from economy to climate to environment. But that is not happening, primarily because of geological and historical separations, attenuated by even deeper divisions created by modern political boundaries, as well as economic forces working to distance of local communities from their own histories.

While the world, the rest of Asia and Southasia, perceive a single Himalaya, the range is made up of sub-chains separated by deep river gorges. The rivers emerged even as the geological uplift of the mountains began 50 million years ago from the seabed of Tethys, and mighty tributaries of the Ganga such as the Kali Gandaki and Arun continue to cut away at the bedrock as the mountains continue to rise inches a year.

Some of the pre-existing social and cultural distance between the mountain people was defined by isolation of communities separated by the rivers and ravines, which led to variegated customs, rituals and tongues. Some of it has to do with the latitudinal direction of trade and commerce which meant that the montane population invariably connected mountain-to-plain, i.e. north-to-south rather than east-west.

The people of the Himalaya are today even more separated, dissected, cut off than before – because of national frontiers that have erased fluid boundaries, and xenophobic nationalism that does not suffer disparate identities. As majoritarian politics sweeps Southasia, the diversity and syncretism that is synonymous with the Himalaya, one which should have served as a lesson and reminder for all, is fast diluting.

There are some exceptions to the historical demographic separations: great continuity is found among the people of Tibetan dialects. When Himal magazine was contemplating a title for its September 1993 cover on the 'Himalayan rimland' – from Baltistan to Arunachal – the editors decided on 'Whither the Tsampa Eaters'. Meals of pounded mountain barley represented cultural commonalities across High Asia.

The other continuity is found among the Khas people who fanned eastward from their base in Kumaon-Garhwal and West Nepal. Over time, Khas Bhasa (Nepali/Gorkhali) became the link language and language of state administration of Nepal, which helped the Khas despite their thin spread to consolidate the Nepali nation-state in the mid-18th century. While the continuities of Tibetan language and culture along the High Himalaya is eroding, riding the easy transferability of the Nepali language the Khas (Brahmin, Chhetri) have got entrenched as the ruling community in Nepal.

In terms of state-building as well, the north-south orientation of political power in midhills is belied by the singular exception of the imperial Gorkhali expansion, across a landscape that at its widest reached from the Teesta to Sutlej. This was the result of statecraft of the unifying king Prithvi Narayan Shah, who fanned out of the principality of Gorkha to subjugate principality after principality. His tools of conquest and consolidation included military prowess, logistical command, marital alliance, blockades and subterfuge.

Nepal's elongated consoli-dation was an exception in the Himalaya, where kingdoms of any girth reached from north to south and reaching towards the plains. Even Kathmandu Valley (Nepal Valley, Nepal Mandal), before being subjugated by Prithvi Narayan, mainly maintained trade links to the north and tilted culturally towards the south.

This historical experience of 'vertical' governance and commerce in the Himalayan region can be seen in the modern era as well: Sikkim and Darjeeling are focused on the Doars rather than Nepal and Bhutan; Kumaon-Garhwal interact more with Punjab-Haryana than Himachal; Nepal's people and trade connect to the rest of India mainly through Bihar and Uttar Pradesh.

Padma Sambhav (Guru Rinpoche) was the sage from present-day Swat who traversed the Himalayan midhills from Riwalsar in Himachal to Halesi in Nepal and Bumthang in Bhutan, before penetrating Tibet spreading the Buddhist word. Like Padma Sambhav, trekkers and pilgrims in touristic or spiritual quest do travel by longitude, but the economic movements and imperatives tend to be latitudinal, between mountain-hill-plain.

The cross-connected regimes of the Tibetan Himalaya have been decisively upturned by the Beijing's

takeover of the 1950s. The Dalai Lama's portraits cannot be hung in private altars in Tibet except in utmost secrecy. But there is extraterritoriality of Chinese diktat, and his birthday can no longer be celebrated publicly by Tibetan refugees in Kathmandu. A final departure will happen when Beijing's authorities decide, as expected, to choose the 15th incarnation of the Dalai Lama upon the *parinirvan* of Tenzin Gyatso, the 14th incarnation.

The pre-existing geographic and demographic distancing in the midhills is now accentuated by international borders and provincial boundaries, with the range shared between five nation states. The national boundaries, the rise of nationalisms and resultant geopolitical schisms have split the already separate peoples of the Himalaya. Today's passport-nationalism frowns on hybrid, inclusive identities and so syncretism and layered identities are no longer the privilege of the stratified Himalaya person.

The life of the Raja of Mustang Jigme Palbar Bista, 25th in the lineage from the founding king, represented the continuous traditions of High Asia even as the Cultural Revolution subsumed Tibet: his passing in December 2016 marked a significant break from history. Like Mustang, Tibetan dialect speakers in other parts of High Asia were once well connected through trade and pilgrimage but are today barred by borders and militarization. The sibling communities of Ladakh and Baltistan are sequestered on two sides of one of the harshest border divisions in the world.

Nepal and Tibet-China are officially separated by a closed border, but it was till recently quite porous with locals conducting trade, maintaining clan links and using pasture lands on either side. Pilgrim-refugees also took advantage of the porosity to flee Tibet and find ultimate shelter in Dharamsala. All that is a thing of the past, belying the hope that Beijing would loosen its hold on Tibet as it became more confident of its hold and administration.

Beijing's insecurity on Tibet has resulted in the Nepal-Tibet border becoming tightly shut. Namche Bazaar, the main village of the Sherpa of Khumbu, used to be a busy market for Tibetan and Chinese goods brought over the 19,050 foot Nangpa La, but that access has been blocked since the 2008 Beijing Olympics, when Tibetan protests angered Beijing.

Tenzing Norgay was born in the region northeast of Everest massif in the Kharta Valley. He grew up in the Khumbu villages of Thame and Khumjung, went in search of portering work in Darjeeling. From there he moved on to become the front-ranking Himalayan climber. Tenzing was always exasperated by constant questions about his citizenship in the era of strict nationalism, whereas if it had to be he was Tibetan, Nepali *and* Indian.

The two great powers of Asia have done their bit to draw and quarter the Himalaya. China's takeover of Tibet in 1959 resulted in progressive Hanization of the region, weakening Tibet's historical faith, culture, language, script, governance and international personality. Along the way, China erected barriers between Tibetan and the rest of 'Tibetan Himalaya', including Baltistan, Bhutan, Baltistan, Ladakh, Arunachal and northern Nepal from Humla to Mustang, Manang, Khumbu and Olangchung.

The boundaries and nationalisms have served to separate similar peoples, cutting off clans and communities. The separation between Jammu and Kashmir and Azad Kashmir is known to many, but not the division that hurt the societies of Ladakh-Kargil and Gilgit-Baltistan (Northern Areas). Even within the Indian hill states, the distinctions of being Himachali or Uttarkhandi have economic implications. The state of Sikkim is coddled by New Delhi as atonement for annexation, but adjacent Darjeeling with a similar population mix is made to wilt under the West Bengali thumb.

While ostensibly a federal republic, India's application of centralized governance disturbed the pre-existing autonomy and sense of agency of the swathe of Indian Himalaya. Jammu and Kashmir was never allowed to flower under the special status accorded it by Article 370 of the Indian Constitution, and even that was wrested in the autumn of 2019 by a two-thirds majority decision in India's Parliament. Jammu and Kashmir and Ladakh emerged as union territories.

The debacle of the brief 1962 war for India made matters worse for the entire Himalayan chain – New Delhi's geostrategic unease regarding the mountain frontier was now heightened right across the range, impacting Indian regions as well as Sikkim, Bhutan and Nepal. This nervous mindset contributed to Sikkim's annexation in 1973, and has been a constant interventionist factor in New Delhi's relationship with Thimphu and Kathmandu. No one can miss the heightened military presence in India's eastern and western Himalaya, as also the presence of the Indian military's road-building arm, including in Bhutan.

The rise of China in the 2000s as a global economic and military power has rendered the Himalayan region

even more vulnerable, by itself and by generating further Indian anxiety. With its extraordinary advance as a world power, Beijing has shifted its position and objectives as regards the Himalaya, seen in its growing intervention and outspokenness on Nepali politics, which used to be an Indian monopoly. Beijing also now shows a more aggressive military stance along the frontier with India, from Ladakh to Arunachal, as well as Bhutan.

Aksai Chin, the eastern bouffant on the official map of India, is claimed and administered by Beijing since long, and there seems little hope in India that it can be gotten back even though it remains on the maps of the Survey of India. Recent Chinese adventurism in Ladakh, however, has made India visibly agitated but curiously timid in its response to Beijing.

All in all, the activities of Beijing and New Delhi crushes the hope for a return to the porous, grey-zone frontier that would allow the mountain people and economies to rebuild syncretism and connections of the past. The 'connectivity' that the geo-strategists talk about these days is about linking the large economies through trade, rather addressing the myriad cross-border tears that need mending. The Himalayan people are hostage to remote power centres.

Truth be told, the Himalayan rimland need not be such a bugbear for the powers north and south. Historically, the mountain range did serve as a physical barrier protecting kingdoms and empires. But we are in the age of high-flying satellites, missiles, aircraft and drones – this is 2022, not even 1962 – and the rimland can at best be the place of skirmishes, actual wars will engulf the heartlands without reference to the Himalaya. A rational understanding of the diminished role of the mountain range as a geo-strategic barrier would do a lot to ease the lot of the 50 million odd people living in these mountains, needlessly made to feel vulnerable.

With lowering of the guard, we could actually start planning commerce across the mountain range using the infrastructure that is in the making. This prospect is linked to the arrival of China's successful rail network in Lhasa in 2000 and Shigatse in 2006, and now moving westward on the Changtang plain. We are actually at a point where goods can flow with just a little bit of additional road-building, particularly along the low valleys of Nepal that breach the Himalaya such as that of the Arun. Indeed, we are very close to having passage of goods between the Chinese mainland and the Southasian mainland. The savings in time and cost of using the Himalayan land transit rather than the maritime route via Malacca Strait offers a tantalizing prospect of pan Asian trade. As far as the planners of the Himalayan region, they should plan for more than earning from transit duties.

The less militarized the Himalaya is, the more one can hope we can have a revival of historical commerce and age-old societal links. Indeed, the prosperity of Kathmandu Valley was largely the result of commerce with Tibet through the Kuti and Kyarung trade routes to the northeast and northwest. Harka Gurung, the scholar-administrator who tracked Himalayan geography and people, studied the natural tilt of High Himalaya communities towards trade entrepreneurship, to make up for the harsh and unproductive environment. He used to relate how every year intrepid Sherpa traders of Khumbu would go up into Tibet via Nangpa La, traverse the Changtang westward, come down to Punjab, travel east to Bihar and trek up and back to the Khumbu – conducting local trade along the entire route on the basis of local supply and demand.

A distant observer would have thought that the two independent states of the Himalaya, Bhutan and Nepal, would have made common cause to face their similar challenges to development and governance, as well as countenancing the overbearing neighbours to the north and south. A very tentative discussion in the 1960s of a Himalayan confederation between Bhutan, Nepal and Sikkim had no hope at all against the first hint of New Delhi's displeasure.

There was always a socio-cultural distance between Thimphu and Kathmandu – besides the difference in polities led by Drukpa and Gorkhali rulers, the former would also have been wary of the Gorkhali taste for expansion. However, the refugee exodus of the late 1980s and early 1990s pushed the two countries as far apart as they could go. When Druk Yul emptied a seventh of its citizenry – Nepali-speaking Lhotshampa from the southern hills, they entered India across the land border, from where they were pushed by Indian authorities into Nepal, as if language defined citizenship.

The one lakh-plus refugees were citizens of Bhutan who were being disowned by Thimphu's autocrats. As the Lhotshampa suffered in the heat of the refugee camps of Jhapa and Morang, Kathmandu did not have the diplomatic wherewithal to push them back to Bhutan, to seek New Delhi's good offices for the same, or to internationalize the matter. Irony be damned, even as it was busy depopulating its southern hills Thimphu began a campaign for international acceptance of the 'gross

happiness index'. It largely succeeded in putting a gloss on its image, relying on gullible western diplomats in search of a Buddhist 'Shangri La' to revere in place of Tibet. That partial theocracies guided by Buddhist clerics can be just as heinous as others has been highlighted in relation to Burma and Sri Lanka, but Druk Yul has thus far escaped such attention and analysis.

After nearly two decades in the refugee camps, when all hope was almost lost, happenstance related to 9/11 events in the United States led to western countries opening up their doors to the Lhotshampa refugees. All but a few thousands have now been settled in the West. But the refugee crisis gave rise to lasting frigidity between two Himalayan countries, and a lasting blot on the Bhutanese record. Whether the day of reckoning will come depends upon the activism of refugees settled overseas.

Speaking of human rights abuse and the export of refugees within the Himalayan region, the subjugation of Tibetans and Tibetan culture by the Chinese state is well known even though little has been/can be done about it. In the Himalaya-Karakoram, the lockhold of Islamabad on Azad Kashmir is not well known. It is New Delhi's control of the larger Jammu and Kashmir that has attracted more world attention, as also the most militarized zone in the world with the highest per capita concentration of military personnel. The resolution of the Question of Kashmir will ipso facto contribute to peace between India and Pakistan, including the reunification of Kashmiri clans and a return of Kashmiri Pandit refugees. However, chances are slim given the need by political bosses in Islamabad and New Delhi to maintain Kashmir as a populist football.

A border dispute that has flared up between Nepal and India has led to a further fracturing of relationships along the mountains. Nepal has long held claims to the Limpiyadhura-Kalapani triangle in its northwest, even though the area was not included in the Nepal government's own maps over the decades. When India put out a new official map in 2019 in the wake of the new status of Kashmir, the Kali River was shown to flow towards the ridgeline of Limpiyadhura. This was significant because the Indian side was thus conceding that this region was Nepal's according to the Sugauli Treaty of 1816, which defined the Kali as the border river. In the meantime, New Delhi started building a road through the area to the Tibet frontier (the route of the Kailash-Manasarovar pilgrimage). Kathmandu was aroused to protest but to no avail.

Nepal's governmental seal included in the Constitution of 2015 contains an image of Nepal's map. Rebuffed by New Delhi, Kathmandu under Prime Minister KP Oli went ahead and amended its Constitution through Parliament, to include the pointy Limpiyadhura finger in the northwest. Earlier to 2019, Nepal and India have had some minor border issues, but Limpiyadhura now represents a major factor to distance the peoples and governments of the Himalaya. The Limpiyadhura matters seems set to continue for decades and will act as a drag on Nepal-India relations, not to mention the cultural relations between the two banks of the Kali.

Much of the world looks to the Himalaya as a pristine region, imbued with spirituality of yogis and mendicants, with even the ability to guide humanity past escalating crises. The Himalayan valleys evolved as *beyuls*, retreats with the ability to heal body and spirit for those fleeing sectarian or political violence.

But if ever the Himalaya was a beacon, it does not today serve that function because it cannot speak with strength nor in one voice. There is no unity of spirit that many expect to find here, even though there may be similarity of mountain landscape, flora-fauna and weather patterns. The beyuls have been weakened before the world at large has had time to recognize and understand them.

The fractured Himalayan polity does not today have a position of its own outside the individual certitudes of national polities: Bhutan, China, India, Nepal, Pakistan. The geographical and economic distinctions that have survived, added the nation state imperatives, does not allow the Himalaya to speak up even as the world regards it as unitary, exotic and elevated. The cumulative Himalayan beyul is a feeble presence amidst the nation states and provinces, even though it has wisdom, experience and perspective to share, to speak truth to global economic and geopolitical power.

There are myriad matters on which the mountain people could speak up, from nuclear disarmament to the climate crisis, plastic pollution, loss of species, natural disasters and human made ones. From societal resilience to self-government, community forestry, social organizing and management of the commons, the mountain peoples can offer options, ideas, leadership. But their voice does not carry even across the mountains, much less within South-asia, Asia and the world.

The particular pain of the 50 million population of the Himalayan is great when aggregated, but the distress does not show through because it is dispersed. There is also little learning from each other, for example when the hills empty out into

the plains through job migration, when families become atomized, and local traditions are lost to the invading economic behemoth. The building of roads on fragile mountains – the invasion of dozers and backhoes – is wreaking havoc with rock strata, slope stability and ground water recharge, but there is little organizing to fight a region-wide contagion. Equilibrium of the mountain slopes created over millennia are being disturbed even as debris, dust and silt are dumped downhill. But do not expect any exchanging of notes between Shimla, Kathmandu, Gangtok and Thimphu – the Chipko movement flowered and subsided in Uttarakhand without being picked up elsewhere in the mountains.

The uniqueness of the Himalayan region, besides the landscape, has always been the diversity of the human communities which evolved distinctively in montane isolation. But the takeover of majoritarian languages runs apace, accompanied by loss of festivals, rituals, dress and cuisine – an accelerated version of what is underway from the Amazon to the Andes and Equatorial Africa.

There are some heartening transformations that have not been remarked enough. The arrival of the LPG gas cylinder has greatly eased the life of the villager, as has use of cement-concrete in construction and corrugated roofing, and the need to enter the forests for firewood and lumber is greatly reduced. Even badly planned and avalanche prone roads allow people to commute by motorcycle rather than make lengthy treks. Large parts of the Mahabharat midhills are today more forested than at any time over the past millennium. Sadly, on the other hand, one more bit of mountain culture is lost when the local watermill stops rumbling, the aroma of wood burning ceases to impact the human senses, village trails are overtaken by undergrowth, and when local song and dance traditions transmogrify into 'item numbers' in dance bars and restaurants.

There is so much that the mountains could tell the rapacious market, to go this far and no further. The Himalaya could tell the dam builders and embankment *wallahs* that the rivers that emerge from its womb – take Kosi with its massive inland delta in east Nepal and Bihar – are natural transporters of silt. This was not considered when western dam and canal technology was copy-pasted to Southasia starting in early 20th century – no wonder that the reservoirs and canals silt up and create existential problems. In the seven decades that the Kosi has been jacketed up with embankments, the river bed is more than 20 feet above the outlying areas of eastern Nepal and eastern Bihar, foretelling monumental disaster if/when the levees breach. But the embankments remain the mantra everywhere.

The Himalaya could tell the engineers and technocrats about the silt in its rivers, but the voice out of the mountains is weak. Cloudbursts are a specific phenomenon of the Himalaya, hitting parts of the chain every monsoon to create localized havoc, as was seen over the past decade from Kedarnath to Melemchi, but the scattering of experience is such that there is no lesson to be taught to those who believe Infrastructure is God. The Teesta flowing through Sikkim is no longer a river but a series of hydrower project cascades, and this is beginning to look like the fate of our rivers from the Dibang to the Jamuna.

The inadequate global response to the climate crisis can be explained, among others, by the neglect of the voice of the most proximate Himalayan witness. The mountains are a thermometer of global warming. While the Arctic and Antarctic can also tell us about the ozone hole and calving of glaciers, the Himalaya has a human voice, whose inhabitants are live witnesses to transformation of the world weather system. What terrible processes will be triggered in the mountains and plains when the Himalayan permafrost begins to give way has not yet become a subject of public enquiry. The Himalaya needs to alert the world, but how?

Unknown even to most who espouse climate science, the glaciers of the Himalaya are receding at a clip also because of the Southasian Brown Cloud – the atmospheric accumulation of dust and soot (black carbon) produced from smokestacks, vehicle exhaust, biomass burning, and dust kicked up from agriculture and infrastructure-building from Sindh to Punjab, Haryana and western UP. The Brown Cloud rises high and is pushed by the year-round westerlies (other than the easterlies of the monsoon months) unto the Himalayan snows. There, the shroud of soot and dust creates the 'albedo effect' resulting in faster snow- and ice-melt. This is how the mountain flanks are converting to rock-scape within half a lifetime, glaciers receding up the slopes, permanent ice breaking off as massive avalanches. No one has tabulated the scale of the calamity – biological, ecological, even geological.

Him-alaya: throughout human history, the great mountain range of Asia has been the 'abode of snow'. But for how much longer will it remain that, and who will listen to the mountain peoples who have so much to tell the people of Earth?

My Himalayan journey

VANDANA SHIVA

MY ecological journey started in the forests of the Himalaya. My father was a forest conservator, and my mother became a farmer after fleeing the tragic Partition of India and Pakistan. The Himalayan forests, rivers, ecosystems have shaped both my identity and mind. It is from the Himalaya I learned most of what I know about ecology. Walking with our father through forests of oak and rhododendron, deodar and pine was our classroom. The songs and poems our mother composed for us were about the trees, forests, and India's forest civilizations.

My involvement in the contemporary ecology movement began with Chipko, a nonviolent response to the large-scale deforestation that was taking place in the Himalayan region. In the 1970s, peasant women from my region in the Garhwal Himalaya had come out in defence of the forests. Logging had led to landslides and floods, and scarcity of water, fodder, and fuel. Since women provide these basic needs, the scarcity meant longer walks for collecting water and firewood, and a heavier burden. Women knew that the real value of forests was not the timber from a dead tree, but the springs and streams, food for their cattle, and fuel for their hearths. The women declared they would hug the trees, and the loggers would have to kill them before felling the trees.

A folk song of that period said: 'These beautiful oaks and rhododendrons, they give us cool water. Don't cut these trees. We have to keep them alive.' In 1973, I had gone to visit my favourite forests and swim in my favourite stream before leaving for Canada to do my PhD. But the forests were gone, and the stream was reduced to a trickle. I decided to become a volunteer for the Chipko movement, and I spent every vacation doing *pad yatras* (walking pilgrimages), documenting the deforestation and the work of the forest activists, and spreading the message of Chipko.

My parents were Gandhians and their doors were open for the leading Gandhians of the Himalaya – Mira Behn and Sarala Behn, and later Sundarlal Bahuguna, Bimla Bahuguna, and Ghanshyam Shailani, the Chipko poet. Mira Behn visited frequently when my father was posted in Chakrata which is where I was born. Mira was born in England on 22 November 1892 as Madeleine Slade, the daughter of

Admiral Sir Edmund Stade. She left England in 1929, inspired by the freedom movement, and became Gandhi's disciple in Sewagram. Because of the heat of Wardha, she was frequently ill. Gandhi told her to set up an ashram in the Himalaya. She set up Pashulok Ashram in Rishikesh near the banks of the Ganga.

It is her life in the Himalaya that made her realize that something was wrong with the Himalaya.

'Pashulok being situated as it is at the foot of the mountains, just where the Ganga emerges from the Himalayan valley, I became very realistically aware of the terrible floods which pour down from the Ganga catchment area, and I had taken care to have all the buildings constructed above the flood high mark. Within a year or two I witnessed a shocking flood: as the swirling waters increased, (there) came first bushes and boughs and great logs of wood, then in the turmoil of more and more water came whole trees, cattle of all sizes and from time to time a human being clinging to the remnants of his hut. Nothing could be done to save man or beast from this turmoil; the only hope was for them to get caught up somewhere on the edge of an island or riverbank prominence. The sight of these disastrous floods led me each summer to investigate the area north of Pashulok whence they came. Merciless deforestation as well as cultivation of profitable pines in place broad-leaf trees was clearly the cause. This in turn led me to hand over charge of Pashulok to the government staff and to undertake a community project in the valley of the Bhilangana. Here I built a little centre, Gopal Ashram, and concentrated on the forest problem.'[1]

During her stay in Garhwal Mira studied the environment intimately and derived knowledge about it from the local people. From the older ones she learnt that, earlier, Tehri Garhwal forests consisted largely of oak, and Garhwali folk songs, which encapsulate collective experience and wisdom, tell repeatedly of species such as banj and kharik. They create images of abundant forests of banj, grasslands and fertile fields, large herds of animals and vessels full of milk. In Mira's view the primary reason for the degeneration of this region was the disappearance of the banj tree. According to her, if the catchment of the Ganga was not once again clothed with banj, floods and drought would continue to get aggravated.

The issue was not merely one of planting trees, but of planting ecologically appropriate trees. As Mira Behn pointed out, the replacement of banj and mixed forests by the commercially valuable pine was a major reason for the increasing ecological instability of the Himalaya and the growing economic deprivation of Garhwali women, since pine failed to perform any of the ecological and economic functions of banj. Like Gandhi, she believed that all beings have equal rights to live, all support each other. There is no living being who does not nourish another, sustain another.[2]

Sundarlal Bahuguna worked with Mira Behn. She told Sundarlal that everything that was wrong with the Himalaya was connected to what is happening to the forests, both the destruction of forests through commercial forestry, and the change in species from the broad-leaved native tress like oak and rhododendron to chir pine which was valuable for timber and resin. She explained how pine replacing oak was destroying the hydrology of the Himalayan ecosystem.[3] She taught Sundarlal that 'The forests of the Himalaya are protectors of the plains, the breadbasket of India. We have a duty to protect these forests not just for Himalayan communities but for India'.[4]

Gandhi's other disciple Sarala Behn was a frequent visitor to our home when my father was posted in Pithoragarh. Sarala Behn, born Catherine Mary Heilman in 1901 in England, had come to India in 1935 to volunteer at Gandhi's Sewagram Ashram. Like Mira Behn, Gandhi told her to move to the Himalaya, and she started to work with women in the Kumaon and Garhwal regions. In 1946 she started the Laxmi Ashram with six girls. Bimla joined in 1949. She later married Sundarlal Bahuguna on condition that he give up politics and dedicate himself to the service of society, a commitment he readily made, and fulfilled through his life. Their ashram in Silyara became a mobilizing and organizing place for the Chipko movement. For us it became an Ashram for Ecology. Sundarlalji passed on in 2021.

The education at Laxmi Ashram was based on Gandhi's idea of Nai Talim, education for economic self-reliance. 'To create conditions for a free society in which people could seek free livelihoods according to their freedom and choice. 'Hands, Heart, and Head should all develop in Harmony.' This is the philosophy on which I have built the Bija Vidyapeeth/ Earth University at the Navdanya Biodiversity farm in Doon Valley.

I call the Chipko movement my university of ecology, where

1. Quoted in Vandana Shiva, *Staying Alive*; Mira Behn, 'Something wrong with the Himalaya', p. 69.

2. K.S. Valdiya, *Himalaya me Mahatma Gandhi ke Sipahi, Sundarlal Bahuguna*. Sasta Sahitya Mandal Prakashan, New Delhi, 2017, p. 48.

3. Vandana Shiva, op. cit., p. 69.

4. K.S. Valdiya, op. cit., p. 48.

knowledge and action are one continuum. *Chipko* taught me about self-organizing. Women would gather daily and put a fistful of grain in a common basket, and that would be the food they ate as they protested in the forest. If one woman was involved with the protest, others would take care of her children, cows, buffaloes; and then they would rotate. I learned how you must turn within yourself to see what resources you have, rather than looking externally.

Chipko taught me the value of self-help and solidarity. I remember in 1977, this forest in Adwani, Uttarakhand was going to be logged for timber. And because the government had already faced some setbacks, they decided to hire local contractors from within the village, rather than from outside. Timber was still being logged, and the village headman was given the contract for logging. Yet, his wife Bachni Devi led the protest to stop the logging.

The women arrived *en masse*, carrying lanterns. Seeing them, the police who were present said, 'Foolish women, can't you see the sun is out?' These lanterns are not for the sun, said the women, 'they're for you'. The slogan they used was '*Kya hain jungle ke upkaar? Mitti, paani, aur bayaar*' (What are the jungles' gifts? Soil, water, and pure air). In other words, forests are not resin, timber, and revenue.

Chipko taught me ecology and biodiversity. When the Chipko movement finally succeeded in getting logging banned in 1981 after the 1978 flood, it was because the authorities then understood what the women were saying: forests regulate water, and therefore to avoid floods and droughts, we need to protect our forests. While others had treated the forest as separate from the river, the women knew it was connected. Half a century later, this is the language of science. Today people look at the ecological functions of the forest. Scientists took half a century to catch up with illiterate women.

Finally, Chipko taught me humility. There is a certain arrogance that comes with science. Science is always pitted against mythology, but dominance based on domination over nature is the mythology of our time. I was a part of the arrogance of science when I was working with nuclear reactors. But Chipko taught me that everyone has knowledge, and that the role of science is merely to co-evolve and co-create knowledge in partnership with nature and people.

From Chipko, I learned about biodiversity and biodiversity-based living economies; the protection of both has become my life's mission. As I described in my book *Monocultures of the Mind*, the failure to understand biodiversity and its many functions is at the root of the impoverishment of nature and culture. The lessons I learned about diversity in the Himalayan forests I transferred to the protection of biodiversity on our farms.

I started saving seeds from farmers' fields and then realized we needed a farm for demonstration and training. Thus Navdanya Farm was started in 1994 in the Doon Valley, located in the lower elevation Himalayan region of Uttarakhand province. Today we conserve and grow 630 varieties of rice, 250 varieties of wheat, and hundreds of other species. We practice and promote a biodiversity-intensive form of farming that produces more food and nutrition per acre. The conservation of biodiversity is therefore also an answer to the food and nutrition crisis. When nature is a teacher, we co-create with her.

Navdanya, the movement for biodiversity conservation and organic farming that I started in 1987, is spreading. So far, we've worked with farmers to set up more than 150 community seed banks across India. We have saved more than 4,000 varieties of rice. We also help farmers make a transition from fossil fuel and chemical-based monocultures to biodiverse ecological systems nourished by the sun and the soil. Biodiversity has been my teacher of abundance and freedom, of cooperation and mutual giving.

Today, at a time of multiple crises intensified by globalization, we need to move away from the paradigm of nature as dead matter. We need to move to an ecological paradigm, and for this the best teacher is nature herself. This is the reason I started the Earth University/Bija Vidyapeeth at Navdanya's farm. The Earth University teaches Earth Democracy, which is the freedom for all species to evolve within the web of life, and the freedom and responsibility of humans, as members of the Earth family, to recognize, protect, and respect the rights of other species. Earth Democracy is a shift from anthropocentrism to ecocentrism. And since we all depend on the Earth, Earth Democracy translates into human rights to food and water, to freedom from hunger and thirst. Because the Earth University is located at Navdanya, a biodiversity farm, participants learn to work with living seeds, living soil, and the web of life. Participants include farmers, schoolchildren, and people from across the world.

The Earth University is inspired by Rabindranath Tagore, India's national poet and a Nobel Prize laureate. Tagore started a learning centre in Shantiniketan in West Bengal,

India, as a forest school, both to take inspiration from nature and to create an Indian cultural renaissance. The school became a university in 1921, growing into one of India's most famous centres of learning. Today, just as in Tagore's time, we need to turn to nature and the forest for lessons in freedom.

In 'The Religion of the Forest', Tagore wrote about the influence that the forest dwellers of ancient India had on classical Indian literature. The forests are a source of water and the storehouse of a biodiversity that can teach us the lessons of democracy – of leaving space for others while drawing sustenance from the common web of life. Tagore saw unity with nature as the highest stage of human evolution.

In his essay 'Tapovan' (Forest of Purity), Tagore writes: 'Indian civilization has been distinctive in locating its source of regeneration, material and intellectual, in the forest, not the city. India's best ideas have come where man was in communion with trees and rivers and lakes, away from the crowds. The peace of the forest has helped the intellectual evolution of man. The culture of the forest has fuelled the culture of Indian society. The culture that has arisen from the forest has been influenced by the diverse processes of renewal of life, which are always at play in the forest, varying from species to species, from season to season, in sight and sound and smell. The unifying principle of life in diversity, of democratic pluralism, thus became the principle of Indian civilization.'

It is this unity in diversity that is the basis of both ecological sustainability and democracy. Diversity without unity becomes the source of conflict and contest. Unity without diversity becomes the ground for external control. This is true of both nature and culture. The forest is a unity in its diversity, and we are united with nature through our relationship with the forest. In Tagore's writings, the forest was not just the source of knowledge and freedom; it was the source of beauty and joy, of art and aesthetics, of harmony and perfection. It symbolized the universe.

In 'The Religion of the Forest', the poet says that our frame of mind 'guides our attempts to establish relations with the universe either by conquest or by union, either through the cultivation of power or through that of sympathy.' The forest teaches us union and compassion. The forest also teaches us enoughness: as a principle of equity, how to enjoy the gifts of nature without exploitation and accumulation. Tagore quotes from the ancient texts written in the forest: 'Know all that moves in this moving world as enveloped by God; and find enjoyment through renunciation, not through greed of possession.'

No species in a forest appropriates the share of another species. Every species sustains itself in cooperation with others. The end of consumerism and accumulation is the beginning of the joy of living. The conflict between greed and compassion, conquest and cooperation, violence and harmony that Tagore wrote about continues today. And it is the forest that can show us the way beyond this conflict.

In the early 1980s I was working in the Science and Technology Policy Unit of the Indian Institute of Management. In 1982, the Indian Ministry of Environment in New Delhi invited me and a team of ecologists to conduct an impact assessment of mining limestone in the Mussoorie hills. Karst limestone with cracks and fissures become cavities and caves which hold water and are a very important aquifer. Sahasradhara (thousand springs) in the Doon Valley flows from the limestone. Our study on mining assessed the hydrogeology and documented the floods and landslides and showed that when limestone is left in the mountains and can perform its hydrological functions, it supports Nature's economy and a sustenance economy for local people through its water gift that is a much bigger economy than one supported by the extraction of limestone.

We worked with local communities to build a movement to save the mountains and streams, and we supported citizens groups. The environment ministry initiated legal action to stop limestone mining in the Doon Valley, and in 1985 the Supreme Court ordered the permanent or temporary closure of 53 out of the 60 limestone quarries in the region. The court ruled: 'This is the first case of its kind in the country involving issues related to environment and ecological balance, and the questions arising for considerations are of grave moment and of significance not only to the people residing in the Mussoorie Hills range forming part of the Himalayas but also in the implications to the welfare of the generality of the people living in the country. It brings into sharp focus the conflict between development and conservation and serves to emphasize the need for reconciling the two.'

The court further held that the closure of mining operations was a price that has to be paid for protecting and safeguarding the right of the people to live in a healthy environment with minimum disturbance of ecological balance and without avoidable hazards to them and to their cattle, homes and agricultural land and undue affection of air, water and environment. The

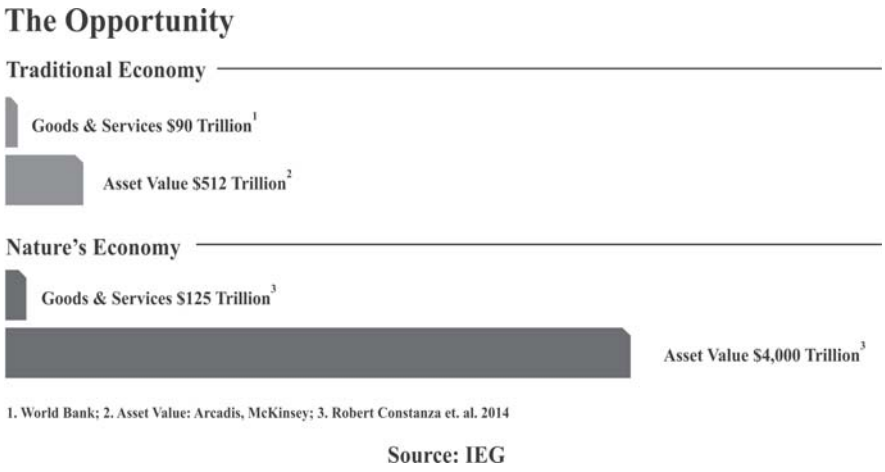
decision by the Supreme Court of India was the precedent for accepting a stable and healthy environment as a human right. The court intervened on behalf of citizens.

We are now facing a climate emergency – unprecedented floods and droughts, heat waves and wildfires melting ice and glaciers, intensifying cyclones and hurricanes. We are facing an extinction emergency. Two hundred species are disappearing daily, one million are threatened. We are facing an existential emergency as billions go hungry and are sick.

Denying that we are in a planetary emergency is no longer possible. But not all solutions address the root causes of the existential crisis we face. While local communities protect nature as living systems, the billionaires are preparing for commodification and financialization of nature.

The Robber Barons of today, the philanthrocapitalists Rockefeller and Gates, the Blackrocks and Vanguards, are trying to own and privatize all of nature and our lives. They are mutating into 'life lords' to whom we will have to pay rent to breathe, eat, drink. What nature provides for free as a gift will now be a commodity we 'buy' at high cost and through digital social credits in the new economy which builds on the old colonization.

In 2021, Rockefeller and the New York Stock Exchange launched Intrinsic Exchange Group (IEG) whose mission focuses on 'pioneering a new asset class based on natural assets and the mechanism to convert them to financial capital.' A new colonialism, a new ownership, a new enclosure of the commons is being worked out by the Robber Barons who do not merely want to own nature, but also her ecological services. The assets include 'Biological systems that provide clean air, water, foods, medicines, a stable climate, human health and societal potential.'[5]


The Opportunity
Traditional Economy
Goods & Services $90 Trillion[1]
Asset Value $512 Trillion[2]
Nature's Economy
Goods & Services $125 Trillion[3]
Asset Value $4,000 Trillion[3]
1. World Bank; 2. Asset Value: Arcadis, McKinsey; 3. Robert Constanza et. al. 2014
Source: IEG

The money machine is trying to own the last seed, the last drop of water, the last river, extinguish the last forest and last farm, the last insect and blade of grass. Creating fictitious currencies, and fictitious finance, nature is being reduced to a 'financial asset', to be miraculously multiplied to $4000 trillion.

The 2008 financial crisis was the result of the financial Robber Barons magically expanding the $90 trillion economy of real goods and services like homes and food into a fictitious $512 trillion financial economy. The financial economy grows at the cost of millions who were unhoused and unfed as a result. The more the real world is turned into a financial asset, the more homelessness and hunger grows.

Wall street and the financial asset companies are now seeing a $4000 trillion fictitious economy of finance by extracting profits from 'Nature's assets' goods and services that the Earth produces. This commodification is an enclosure of the commons of life. It is an attempt to own the last river, the last forest, and the last acre of land. It is a recipe to displace and dispossess the real custodians of nature, the indigenous people and small farmers leaving them without access to land, forests and water and their earth centred cultures and livelihoods. Hunger, poverty, disposability, dispossession will grow. This is a violation of Nature's Economy, Rights of Mother Earth, Rights of all beings and Human Rights.

Creating new algorithms to multiply finances and increase financial resources cannot regenerate the life lost in nature through ecological destruction. You can convert nature into cash through extractivism. But you cannot turn cash into nature. Protecting nature needs love and compassion, it needs economies of caring and sharing. This is the legacy of the Chipko movement which built on the freedom movement to create economies of permanence. I am grateful that my life's journey has allowed me to walk in the footsteps of those who understood the value of nature and the Himalaya.

5. https://unlimitedhangout.com/2021/10/investigative-reports/wall-streets-takeover-of-nature-advances-with-launch-of-new-asset-class/

https://www.intrinsicexchange.com

https://www.intrinsicexchange.com/solution

https://fortune.com/2021/09/14/nyse-natural-asset-company-ieg-esg-investment-vehicle/

Shrinking pastoral spaces

HERMANN KREUTZMANN

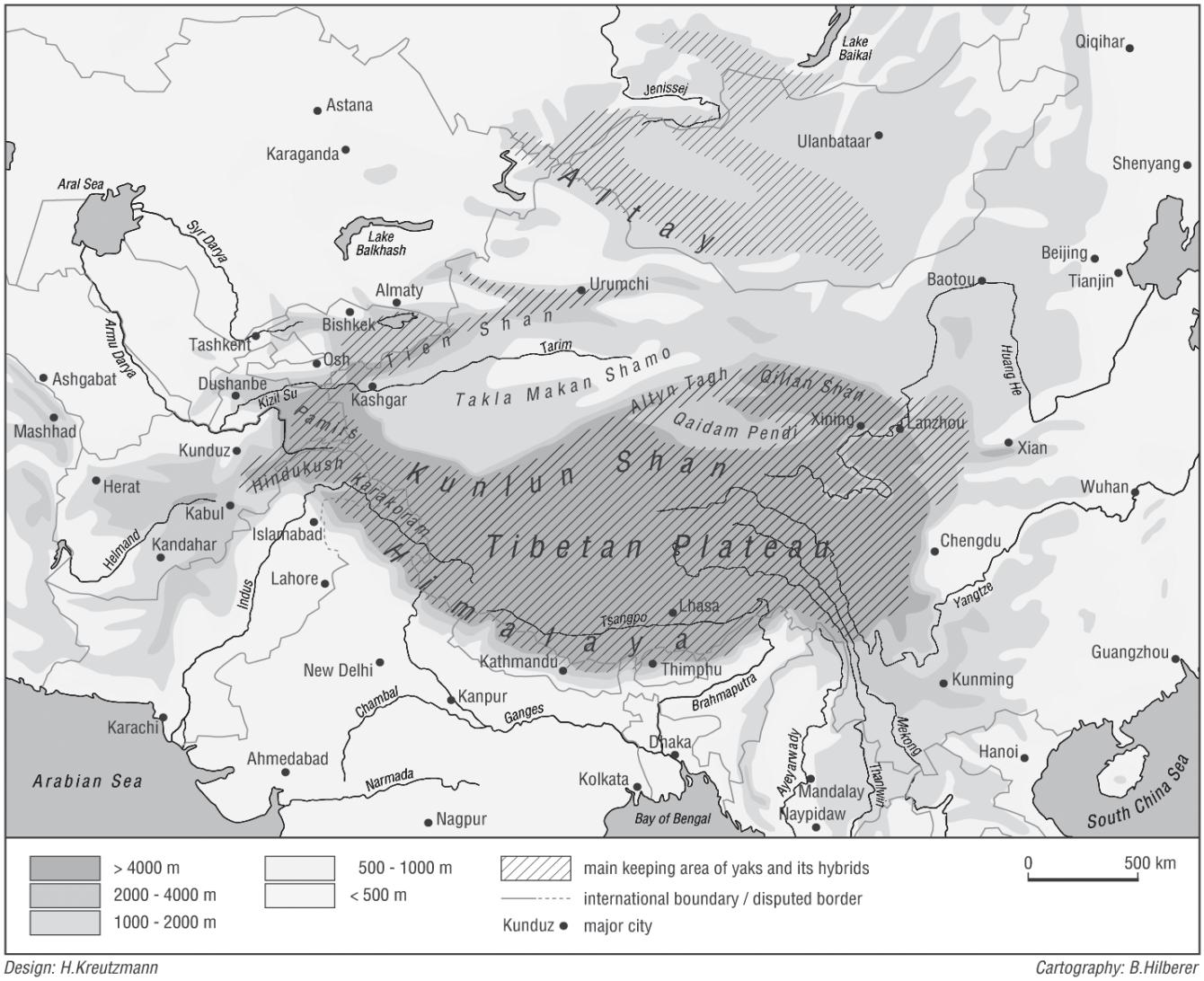
THE wider Himalayan Arc consisting of mountain ranges that incorporate major mountain systems such as the Tien Shan, Pamir, Hindukush, Karakoram, Himalaya and Kun Lun Shan Mountains, the latter enclosing the Tibetan Plateau is ecologically a very diverse mountainous region with peaks and plateaux. Steep mountain slopes and deeply incised valleys, glaciated areas above the snow lines, deserts and steppes, forests, rangelands and wetlands compose a region that offers limited space for mountain communities to settle in compact oases and vast areas for extensive forms of pastoral practices. The latter is widely congruent at its higher elevations with the distribution of the yak and its hybrids, indicator species for complex forms of pastoralism (Figure 1). Sheep and goats dominate as marketable livestock species in lower elevations.

Mountain ranges often contain little oases for irrigated cultivation compared to partially more than half of its entire surface that can be utilized for one or the other form of animal husbandry. Consequently, it is not surprising that due to seasonal variation in fodder availability long- and short-ranging mobility has been part of human adaptation over centuries by utilizing and maintaining natural resources in a sustainable manner.

The romantic vision of free-ranging nomads that have been avoiding settled and governed areas probably never existed although state evasion and freedom from exploitation and expropriation has often been their goal.[1] Pastoral communities were as much

1. See James C. Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. Yale University Press, New

Figure 1: The wider Himalayan Arc consists of several mountain systems that are the region of yak breeding and keeping.



Design: H.Kreutzmann *Cartography: B.Hilberer*

Source: Hermann Kreutzmann 2012, p. 3.

dependent on their settled neighbours for supplies of grain and other commodities as cities and villages were markets for animal products and demanding transport services from mobile communities. Their interlinkages with regional potentates and rulers, consumers and customers left certain spaces for flexible responses to changing power structures.

The advent of colonial powers in the Himalayan Arc resulted in a multilateral contest that led to designated spheres of influence and finally to the demarcation of imperial boundaries and regional borders. When delineated boundaries became efficient geopolitical instruments of state control in borderlands, it significantly affected the mobility range for pastoral communities and led to shrinking pastoral spaces.

Prominent examples are the restricted movement of Afghan nomads across the Durand Line, separating nowadays Afghanistan from Pakistan, on their way from the summer pastures in the Hindukush heights to the Indus Valley during winters.[2] The Kashmir conflict between India and Pakistan significantly affected the seasonal migration of Bakerwal pastoralists across the line of control.[3] Many other examples are

Haven; Hermann Kreutzmann, 'Boundary-Making as a Strategy for Risk Reduction in Conflict-Prone Spaces', in Detlef Mueller-Mahn (ed.), *The Spatial Dimension of Risk: How Geography Shapes the Emergence of Riskscapes*. Routledge, Milton Park, 2013, pp. 154-171; Hermann Kreutzmann, 'Pamirs at the Crossroads', in Jelle Wouters & Michael Heneise (eds.), *The Routledge Handbook of Contemporary Highland Asia*. Routledge, Milton Park, 2022, pp. 116-128.

2. Richard Tapper, 'Who are the Kuchi? Nomad Self-Identities in Afghanistan', *Journal of the Royal Anthropological Institute* 14, 2008, pp. 97-116.

3. Aparna Rao and Michael Casimir, 'Vertical Control in the Western Himalaya: Some Notes

known from the Pamirs where border closures hindered pastoralists, traders, and pilgrims to cross from Russia into China or Afghanistan, or in recent years between newly independent Central Asian Republics.[4] Salt caravans from the Tibetan Plateau provided for centuries the valuable commodity to Himalayan communities, but were refrained to cross from Tibet into Nepal after China's conquest by enforced boundaries.[5]

Nevertheless, shrinking pastoral spaces occurred not only by interrupting migration routes, regulations and control contributed as much as the forces of settlement expansion and modernization strategies. The 20th century is characterized by infra-structure development, cultivation of formerly pristine lands, destroying of forests and revaluation of natural assets, population and settlement growth. Archaic forms of extensive forms of pastoral practices found their anti-thesis in the spirit of modernization and technological progress. The promotors of modernization and resource exploitation supported a 'modern' mobile society, but termed classical forms of mobility as outdated, backward and refutable.

Technology-driven mobility as individual motor traffic and recre-ational travel, frequent changes of residence as part of social mobility and flexible professionalism represented the modern lifestyle, while herd mobility as part of the livelihoods in pastoral communities represented and were stigmatized as 'traditional', socio-economically stagnant and less productive agricultural practices.

Underlying is an old and well known cultural conflict between mobile and resident communities, which seem to be mutually suspicious about the behaviour and lifestyles of the other. Thus, the shrinking of pastoral spaces is as much a spatial phenomenon focusing on area and distance as it is a political, socio-cultural and development theory-inspired process that has accelerated programmes of sedentarisation and settlement of mobile communities in most countries. The culmination of this process might be the so-called final settlement of all nomads in the People's Republic of China during the last decade.[6]

My discussion about a 'tragedy of responsibility' will exemplify the process that has occurred in the rangelands and pastoral areas of the wider Himalayan Arc in the framework of social and climate change. Why should it be appropriate to label a development process as 'tragedy' and why such an adverse designation could and would be connected with 'responsibility'?

In my attempt the notion of 'tragedy' appears in relation to pasture resources as a two-fold feature. First, the tragedy occurs in the guise of state neglect and ignorance. When social and climate crises affect endangered lands and marginalized people often no or insufficient responsibility by state authorities or the like is extended to benefit vulnerable communities or to mitigate their risk exposure. Such events could be droughts, earthquakes, floods and landslides, but as well political turmoil, revolutions and/or civil war. Second, one could term active external interventions as a tragedy when state authorities interfere in the affairs of communities without any participation by the affected and concerned persons in decision-making about their future.

Pastures and rangelands repre-sent the largest extensively utilized space in mountain regions and high-land steppes of Central and South Asia. The perceived challenge of combining socio-economic moderni-zation with ecological sustainability has led to severe forms of intervention and forceful interference with long-lasting effects in recent years. Policy makers try to combine both strategies in their development plans for nomads and pastoral people. Entitlement and sus-tainability are two dominant aspects that are shaping human-environmental relations in the fields of water, pasture and forests.

Spatial control and neoliberal conquests have been driving agents for the creation of permanent settlements for former nomads. This ideology-driven approach aimed '... at reducing flexibility in favour of concentration and rootedness. Modernization theory translated into development practice captured all elements of pastoral life and tried to optimize breeding techniques, pasture utilization, trans-port of animals and products, and related processing concepts to increase the value of livestock products'.[7]

The antagonism shines up in the meeting of the mobile and the settled. Both ascriptions refer to prevalent

on the Pastoral Ecology of the Nomadic Bakrwal of Jammu and Kashmir', *Mountain Research and Development* 5(3), 1985, pp. 221-232.

4. Hermann Kreutzmann, *Pamirian Crossroads: Kirghiz and Wakhi of High Asia*. Harrassowitz, Wiesbaden, 2015.

5. Christoph von Fürer-Haimendorf, *Himalayan Traders: Life in Highland Nepal*. J. Murray, London, 1975.

6. Hermann Kreutzmann (ed.), *Pastoral Practices in High Asia: Agency of Development Effected by Modernisation, Resettlement and Transformation*. Springer, Dordrecht, 2012; Hermann Kreutzmann. 'The Tragedy of Responsibility in High Asia. Modernizing Traditional Pastoral Practices and Preserving Modernist Worldviews', *Pastoralism: Research, Policy and Practice* 3(7), 2013, p. 11.

7. Hermann Kreutzmann and Stefan Schuette, 'Contested Commons – Multiple Insecurities

dichotomies: tradition and modernity, weak and powerful, rural and urban, the slow and the fast mover. In mountain terminology it was captured in the highland-lowland antagonism. It originates in embedded suspicion against mobile people by settled communities. The opposition between mobile and settled often disguises fundamental differences in the perception of what decision-makers think development should look like and should achieve. In the following I shall focus on the modernization of traditional practices and tendencies to preserve modernization as a key concept of development.

Modernization theory seems to be a common denominator crossing ideological borders during the Cold War, during which capitalist development experts and communist central planners aimed at changing people's lifestyles to attain higher levels of production and welfare. Nomadism was one of their main targets; settling of nomads was a powerful symbol and visible attes-tation that change had taken place. The results are well known to us; the more surprising is the fact that old blueprints have been reanimated as we shall see below.

The settling of nomads resulted in an early version of land grabbing, expropriation of inherited resource access and resource conversion, albeit it took place mainly within the boundaries of nation states and promoted input-demanding forms of agriculture in order to increase material output. For example, collectivization in its Soviet and Chinese interpretations and expressions has significantly altered and shaped Central Asian pastoral practices. The conversion of pastures into arable land has caused one of the most significant environmental impacts of land degradation on Earth. In the Kazakh steppe, for example, 25 million hectares of pastures were converted into arable land within a span of only seven years. The subsequent process of degradation is mostly irreversible; half of this land has fallen fallow in the meantime. Arable land was not expected to revert to pasture again.

The Kazakh example is a good case in point because, first, collectivisation initiated an exodus of millions of Kazakh nomads and inflicted heavy losses of life; groups of Kazakhs escaped to Xinjiang and tried to cross the Himalayas; only a few arrived in India. After a long migration across the Kun Lun Shan and Himalayas a small group of Kazakh survivors arrived in Ladakh and Kashmir in 1942; several thousand settled in Kashmir, Hyderabad and Bhopal.[8]

Similar processes took place south and east of the Soviet realm with varied expressions and changing efficiency. Pastoralists were 'developed' into farmers. From Afghanistan to Bhutan, modernization strategies have resulted in shrinking numbers of pastoralists and numerous programmes and packages to modernize agriculture since the last quarter of the 20th century.[9] Input-driven forms of development aimed to increase productivity. In both areas perceptions of modernization did not differ significantly. The process of settlement continued, and in the true spirit of modernization theory the convergence of lifestyles was envisaged, meaning the settling down of all people.

In Afghanistan, processes of re-nomadization are observed despite the high prevalence of landmines. Investors who seek a profit from mobile animal husbandry have taken the risk despite continuing and even growing insecurity and poor governance.[10] The passing of a new pasture law seems to lead the civil path despite of all kinds of growing insecurities.

In post-Soviet societies, various kinds of adaptation strategies have been employed and pastoral practices have encountered a privatization drive. In recent years new land and pasture laws have changed the rules and regulations in the relationship between the state as proprietor of land and pastoral users.[11] So-called new breeders have emerged to use the available opportunities given.

In South Asian countries the adaptation and modification of their colonial legacies in pasture and forest legislation is discussed and leading the way to the challenges posed by climate

of Pastoralists in North-Eastern Afghanistan', *Erdkunde* 65(2), 2011, pp. 99-119.

8. See India Office Library & Records: Departmental Papers: Political & Secret Internal Files & Collections 1931-1947 – Collection 24: Northern Frontier: IOL/P&S/12/3302: Northern Frontier. Kazaks (08.06.1942-21.12.1945).

9. Kuenga Namgay, Joanne Millar, Rosemary Black and Tashi Samdup, 'Transhumant Agro-Pastoralism in Bhutan: Exploring Contemporary Practices and Socio-Cultural Traditions', *Pastoralism: Research, Policy and Practice* 3(13), 2013, p. 26; Liz Alden Wily, 'The Battle Over Pastures: The Hidden War of Afghanistan', *Revue des mondes musulmans et de la Méditerranée* 133, 2013, pp. 95-114.

10. Stefan Schuette, 'Pastoralism, Power and Politics: Access to Pastures in Northern Afghanistan', in Hermann Kreutzmann (ed.), *Pastoral Practices in High Asia: Agency of 'Development' Effected by Modernisation, Resettlement and Transformation.* Springer, Dordrecht, 2012, pp. 53-69.

11. Andrei Doerre, 'Promises and Realities of Community-Based Pasture Management Approaches: Observations from Kyrgyzstan', *Pastoralism: Research, Policy and Practice* 5(15), 2015; Tobias Kraudzun, 'Livelihoods of the "New Livestock Breeders" in the Eastern Pamirs of Tajikistan', in Hermann Kreutzmann (ed.), *Pastoral Practices in High Asia: Agency of 'Development' Effected by Modernisation, Resettlement and Transformation.* Springer, Dordrecht, 2012, pp. 89-107; Hermann Kreutzmann and Teiji Watanabe (eds.),

change adaptation and international conventions on nature protection. Pastoralists are among rural dwellers who remain grossly neglected. Their marginalization and neglect became again obvious when the International Centre for Integrated Mountain Development published their 'Hindu Kush Himalaya Assessment' in 2019.[12]

Mountain pastoralists are more or less absent on the 627 pages, which reflects their political position and social marginalization. As stakeholders and actors, they are often deprived of any rights and entitlements. On the other hand, they would and need to play an important role as landscape managers in climate-change-related transformations. Shrinking spaces for pastoralism are often the result of abandoning customary rules in favour of state interference under the pretext of nature protection and afforestation.[13] Pastoralists are losing their local markets as food production is shifting away from rural areas.

The Chinese government is taking a proactive role in interfering in all dimensions of pastoral practices. After collectivization and deregulation, leading to the household responsibility system, a new approach has been followed. The present holistic Chinese state intervention justifies being termed as a renaissance of state dirigisme and modernization pragmatism if it had ever been dead. The straightforward and solitary approach to changing rural livelihoods in pastoral areas involves significant financial contributions and professional support from affluent coastal areas of China and is centrally planned.[14]

A decade ago, the announcement by former Prime Minister Weng Jiabao of the 'Twelfth Five-year-plan for the project of sedentarization of nomads within China' seemed to be the final verdict on settling the remaining pastoralists in Inner Mongolia, Tibet, Xinjiang and adjacent areas. The key concept is strongly linked to resettlement schemes that put the aspect of mobile versus settled in the forefront. The detailed regulations have wider implications regarding the reduction of the number of individuals active in pastoralism, the application of 'modern' techniques in animal breeding and health, the introduction of sophisticated pasture management through fencing, the introduction of economies of scale in herd management and marketing of livestock products. Consequently, townships are planned and built – in great style – as the nuclear cell of 'resettlement schemes'.

The justification for such a severe move is from a rationale that identifies an ecological crisis as the prime driver and draws on the convergence principle in modernization theory. An alleged degradation of pastures provides the pretext for intervention to secure a valuable societal resource. In this perception pastoralists are picked as the culprits responsible for overgrazing and they would need to be controlled.[15] In China, the active planning process is aiming at a reduction of the use of natural pastures as a source of forage. International conventions on ecological protection, environment and development are quoted; compensation schemes such as payment for ecosystem services are being experimented with.

The second line of argument is just as important, as here the Chinese authorities take responsibility for raising the social status of pastoralists. This is implemented by advocating geographical and social mobility. Settling the pastoralists in townships, as well as the introduction of centralized and regulated livestock-breeding with less manpower, means that pastoralists and their children lose their livelihoods and are expected to take up other occupations.

The regional expressions introduced for non-Chinese High Asia have in common that we are observing a depopulation of the pastoral periphery while people are being concentrated in urban settlements. Fieldwork experiences from the Himalayan range of India, Nepal and Bhutan tell us that migrants stem from the remotest locations; in some villages nearly every household was linked to a migration scheme that could extend as far as to Southeast Asia, the Arabian Peninsula, and Europe. The Pamirian Mountains

Mapping Transition in the Pamirs. Changing Human-Environmental Landscapes. Springer, Cham, 2016.

12. Philippus Wester, Arabinda Mishra, Aditi Mukherji and Arun B. Shrestha (eds.), *The Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People*. Springer, Cham, 2019.

13. See for Nepal Popular Gentle and Rik Thwaites, 'Transhumant Pastoralism in the Context of Socioeconomic and Climate Change in the Mountains of Nepal', *Mountain Research and Development* 36(2), 2016, pp. 173-183.

14. For Tibet see an overview in Andreas Gruschke and Ingo Breuer (eds.), *Tibetan Pastoralists and Development: Negotiating the Future of Grassland Livelihoods*. Reichert, Wiesbaden, 2017; Dennis P. Sheehy, Daniel Miller and Douglas A. Johnson, 'Transformation of Traditional Pastoral Livestock Systems on the Tibetan Steppe', *Sécheresse* 17(1-2), 2006, pp. 142-51. Further case studies are found in Gongbuzeren, Lynn Huntsinger and Wen Jun Li, 'Rebuilding Pastoral Social-Ecological Resilience on the Qinghai-Tibetan Plateau in Response to Changes in Policy, Economics, and Climate', *Ecology and Society* 23(2), 20188, pp. 21.

15. See Richard B. Harris, 'Rangeland Degradation on the Qinghai-Tibetan Plateau: A Review of the Evidence of its Magnitude and Causes', *Journal of Arid Environments* 74, 2010, pp. 1-12.

are devoid of a young pastoral workforce, as are other regions in Tajikistan and Kyrgyzstan.

Talking about lack of responsibility is a double-edged issue. Up to the 1950s, pastoral areas were niches of evasion as James Scott has shown so prominently in his book on the 'art of not being governed'.[16] Researchers' sympathy for the periphery has transformed into administrators' greed. Bureaucrats have penetrated as far as the limits of the nation states, borderlands have been incorporated into mainstream societies, and spaces for evasion are shrinking tremendously. We have seen the attention that post-revolution China has directed towards its pastoral communities during the past 65 years. China has a legacy of top-down interventions accompanied by all kinds of legislation, incentive packages and modernization programmes. But what have the neighbours done?

India and Pakistan have inherited rangeland management policies as a colonial legacy. Both started designing a national rangeland management policy rather late, as a side effect of new forest legislation. Their common point of reference was the 'Cattle Trespassers Act' of 1871 and the 'Forest Policy' of 1894. In Pakistan a 'National Rangeland Policy' has been announced; a decision about the draft is still pending. India envisaged a paradigm shift with the 'National Forest Policy' (1988), in which rangelands played an important role, followed by the 2006 'National Environmental Policy'. In both countries livestock production is supposed to be intensified to meet growing market demands in an arena of decreasing rangeland availability. Both are apparently failing to cope with the challenges. Similar statements could be made for Nepal. Only Bhutan nationalized its rangelands, made pastoralists – who are assumed to constitute a tenth of Bhutan's population – mainstream actors and made them eligible users within the framework of the 2007 'New Land Act of Bhutan'.[17]

In Afghanistan laws related to pasture management seem to have survived at least on paper. The 'Pasture Law' of 1970 codified the property rights of the government. The latest amendment was decreed under the Taliban in 2000. Currently the pasture law is being redrafted under the guidance of international agencies to incorporate community-based pasture management systems. But the provisions of 1970 remain the official policy to date with little effect on pastoral practices and interferences by powerful actors.[18]

A process of transition from state-owned property rights to leasehold and private and/or community-based pasture rights characterizes the situation in the former Soviet Central Asian Republics. Kyrgyzstan recently introduced a new law on pastures, while Tajikistan has been following suit.[19] Both countries acknowledge the importance of utilizing the natural potential; the so-called 'new breeders' are making ample use of their opportunities.

This brief characterization of policies and plans reveals a varied set of attitudes towards the management of the pastoral commons within the 'modernization' ideology. The 'tragedy of responsibility' comes in different disguises. The designs of national policies are quite different and mainly governed by national agendas and international pressure. Whether they might be an adequate and appropriate instrument to address the challenges the livelihoods of pastoralists are undergoing remains unanswered here.

Modernization theory is alive and has always been alive; only its disguises and expressions have changed over time! Its inbuilt contradiction with true sustainability concepts is often neglected or just ignored. The central paradigm of modernization requires keeping the promise of convergence of lifestyles on an elevated level. All technological attempts to reduce the overexploitation of natural resources, to adapt to the requirements of a growing world population and to mitigate effects of global warming have not changed the direction and pattern of 'development'. Considering limited resource availability, various scenarios have shown the finitude of certain commodities. The debates on 'peak oil' or 'peak water' are among those but could be crucial ones. Under the premise of sustainability other forms of resource utilization might be required to avoid another 'tragedy of responsibility'.

16. James C. Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. Yale University Press, New Haven, 2009.

17. Sonam Wangdi and Nawang Norbu, 'Good Fences are Key to Sustainable Pasture Management and Harmonious Pastoral Society of Merak and Sakteng in Bhutan', *Pastoralism: Research, Policy and Practice* 8(4), 2018, p. 11.

18. Hermann Kreutzmann and Stefan Schuette, 'Contested Commons – Multiple Insecurities of Pastoralists in North-Eastern Afghanistan', *Erdkunde* 65(2), 2011, pp. 99-119.

19. Andrei Dörre, 'Common Pool Resources, Collaborative Action, and Local Knowledge in High Asia', in Matthias Schmidt, Rune Steenberg, Michael Spies and Hendrik Alff (eds.), *Beyond Post-Soviet: Layered Legacies and Transformations in Central Asia*. Universitaet Augsburg, Augsburg, 2021, pp. 49-63; Michelle Lim, 'Laws, Institutions and Transboundary Pasture Management in the High Pamir and Pamir-Alai Mountain Ecosystem of Central Asia', *Law, Environment and Development Journal* 8(1), 2012, pp. 45-58.

Trashing the Himalaya

RAVI CHOPRA

'तत्र धन्यं महाभाग भारतं वर्षमीरितं।
तत्र धन्यो महाभाग हिमवद्देश संज्ञकः।।
तत्रापि धन्या ते देशा यत्र गङ्गा सरिद्वरा।
हरेः सानिध्यकं स्थानं तत्रापि हि मुनीश्वर'।।
'O sage Naarad! Among the places on Earth, the land of India is blessed. In India, the land of Himalaya is blessed and the region in Himalaya where Ganga is born is especially blessed because this is the place where she exists in convergence with God.'

Skandapuran-Kedarkhandam,
Chapter 149, Shloka 39-40.

FOR most of recorded history, physical remoteness, geological fragility, ecological diversity and the harsh climate of the central-western Himalayan region, encompassing Uttarakhand and Himachal Pradesh, kept human disturbance low and sustained its pristine wildernesses and culture. Reverence for Nature, frugality and a welcoming attitude towards newcomers emerged as dominant cultural values.

In recent decades, however, very rapid modernization in the form of physical infrastructure construction – primarily highways, dams and railways – urbanization, riverbed mining, industrialization in the southern plains and tourism is causing massive transformations in the ecology, society and culture of the region. While this article focuses on Uttarakhand, the changes in Himachal Pradesh are similar as some examples from there make clear.

Uttarakhand's most distinctive feature is the presence of four major longitudinal tectonic fault zones, the Himalaya Frontal Fault (HFF), Main Boundary Fault (MBF), Main Central Fault (MCF) and the Indo-Tibet Suture Zone (ITSZ), going south to north. Tectonic activity is continuously thrusting four major Himalyan ranges through these fault zones, i.e., the Shivaliks (through the HFF), Lesser Himalaya (MBF), Higher Himalaya (MCF) and the Trans-Himalaya (ITSZ). Himachal Pradesh also features four corresponding mountain ranges, the Shivaliks, Lesser Himalaya, Great Himalaya and the Zanskar range.

From a distance the Himalayan ranges appear as mighty masses of

rock with verdant or snowclad slopes. Close-up, the still evolving ranges appear more clearly as the fragile, thrusted, sheared, fissured and jointed detritus of a collision that took place millions of years ago when the Indian plate rammed into the Eurasian landmass. Over geologic time as the Indian plate continued to grind under the Eurasian plate the detritus metamorphosed into rock with a ruggedly massive appearance , rising to lofty heights. But much of it also remained as soil and rubble, cloaked under forest or snow.

The towering heights of the Himalayan mountain ranges enabled them to capture pollen and seeds carried from distant regions by the winds swirling around the globe. Thus, a combination of the native species of the Indian plate, the immigrant captured taxa, and the tremendous climatic variation along the altitudinal range created a phenomenal biodiversity storehouse.

The main forest types in the central-western Himalaya region include tropical dry deciduous, subtropical coniferous, dry temperate, moist temperate, subalpine and alpine vegetation. The tree line is about 3000 metres. At higher elevations, alpine meadows replace forests. Important large wild fauna include the snow leopard, musk deer, otter, barasingha, tiger, elephant, gharial, mahseer, monal, hornbill and the pheasant western tragopan. The limits of the distribution range of the snow leopard, Himalayan brown bear, the western tragopan and the Asian elephant lie in this region. Elephants are not found anywhere in Asia west of the Kalesar Wildlife Sanctuary in Himachal Pradesh.

Cutting through the mountain ranges are hundreds of glacial and rainfed rivers. Four of the five major rivers of Punjab – the Satluj, Beas, Ravi and Chenab – flow through Himachal Pradesh, with the last three originating in Himachal. Almost the entire Upper Ganga basin in India lies in Uttarakhand. Though glaciers provide many rivers with perennial flow, their annual flow volume is largely water brought down the mountains by small rainfed streams, springs and underground seepages. The lean seasons of glacier-fed and non-glacial rivers are winter and summer, respectively.

Since ancient times the central-western Himalayan states have been known as *Dev Bhoomi*. Traditionally people worshipped local deities or regional *devis* and *devtas*. Grateful communities built temples to their local deities and dedicated nearby land, forests, lakes and ponds to them, leading to conservation of critical natural resources. Even today, Nanda Devi, Uttarakhand's highest peak, is worshipped as a goddess across the state. Regional deities like Mahadev, Mahasu and Nag devtas are common to parts of Himachal Pradesh and Uttarakhand. This culture of worship and preservation of vast natural landscapes in pristine purity drew saintly people from all over India to pray and meditate there. Saints, *rishis* and *munis* found ideal locations for meditation and penances and established *ashrams* here.

The traditional economy in the central-western Himalayan region was based on subsistence agriculture, forest resources, artisanal crafts, some mining and cross-border trade with Tibet through mountain passes. The nature of the controlling institutions determined whether forests were exploited by the state or whether they provided livelihood resources to the community and protected the fragile environment. After 1857, British lawmakers and the Indian princely states, enacted laws to establish monopoly over forests in their territories, while curtailing the customary rights of local communities. Strong protests by Kumaoni peasants after 1911 led to the restoration of community rights in Kumaon and the establishment of *van panchayats* for managing community forests in Uttarakhand.

The laws and institutions devised by the British rulers for natural resources management were largely retained after independence. Indian commercial interests replaced colonial interests. Forests became major revenue generators for the state and the powers of the van panchayats were gradually reduced.

Deforestation in Uttarakhand reduced access to fodder, agricultural productivity declined and poverty increased. Since the mountain areas did not generate agricultural surpluses development planners did not invest in mountain agriculture, even though the majority of the mountain work force was involved in agriculture. Inability to produce enough food grains for subsistence in the mountain districts led to increasing out-migration of able-bodied men and greater burdens for the women left behind. Community resource management systems deteriorated. For about two decades after the early 1970s, the Chipko movement in Uttarakhand raised national and international awareness that a harmonious people-forests relationship was essential to sustain the mountain environment and its resident communities.

In the following decades, however, state governments prioritized rapid economic growth despite mounting evidence of its destructive impact on the ecology – forests, rivers and wildernesses – and on local cultures.

Forests are the worst victims of the present anti-environment economic growth model. In this time of climate change, the loss of natural forests – a major defence against global warming, is a manifold disaster. Natural forests are the backbone of the mountain ecology and society. They absorb CO_2, release oxygen, shelter flora and fauna, minimize soil erosion and landslides and help recharge groundwater aquifers which sustain the discharge of springs and the base flows of rivers in the valleys. They provide local communities with fuelwood, fodder, food, medicinal herbs and other livelihood assets. Trees planted as part of compensatory afforestation measures take many years to mature, during which their CO_2 absorption capacity is much below that of mature trees that are lost. Annual resources from trees and forests are not compensated adequately until the new trees mature.

According to the State of Forests Report – 2021, published by the Forest Survey of India, the land under the forest departments of Uttarakhand and Himachal Pradesh is estimated to be 71.05 and 68.16 per cent of the geographical area, respectively. Not all of it is forested. It includes glaciers, rivers and stream beds. The actual forest cover in Uttarakhand is 24,305 km^2 (45.44% of the geographical area) and 15,433 km^2 (27.73%) in Himachal Pradesh.

Since independence the extent and quality of forest cover in the central-western Himalayas has steadily deteriorated. In Uttarakhand, the Forest Department has developed *chir* pine plantations for industrial timber and resin replacing large tracts of broad-leaved *banj* (oak) or banj and *burans* (rhododendron) forests. Pine plantations do not provide the same quality of environmental services as the natural forests. As far back as 1950, Mira Behn, the well known follower of Mahatma Gandhi, living in Rishikesh in the Uttarakhand Himalaya foothills, urged the Forest Department to promote oak instead of pine.

After the Indo-Chinese border war in 1962 highways were built up to the borders to facilitate troop movements. Heavy forest-cutting followed with the availability of road transport. Clear-felling of forests above an altitude of 1000 metres was eventually halted in Uttarakhand in 1981, mainly in response to the efforts of the Chipko movement.

Data from the Union Ministry for Environment, Forests and Climate Change (MoEF & CC) revealed that 58,684 hectares (ha) of forest area in Uttarakhand was diverted for non-forest use between 1991 and 2021, mainly for road construction, power generation and its transmission, Most of it occurred in Uttarkashi, Rudraprayag, Chamoli and Pithoragarh districts. Not surprisingly, these were also the most affected districts during the 2013 floods disaster. Similar diversion in Himachal Pradesh is estimated at about 13,000 ha.

In addition to the authorized diversion of forest land, large forest areas lost to landslides resulting from shoddy road construction or widening practices remain unaccounted. An exceptionally high number of chronic landslides have been triggered along the central government's controversial flagship road-widening project: the 889 km long Char Dham Pariyojana in Uttarakhand. Along a 127 km stretch on NH-125, 102 vulnerable slope sites were recorded. Slope failures at 44 locations occurred within 12 months of hill cutting. Geological investigations and slope protection measures were grossly inadequate. At many locations construction-induced landslides have killed people, destroyed or damaged homes, livelihood resources and other physical infrastructures. Many mountain springs, a major source of daily water supply, have been lost or diminished.

Shrinking habitats due to construction of roads, dams and expanding urban areas have enhanced wildlife-human conflicts. Leopard attacks killed 34 people and injured 367 others between 2004 and 2017 in Himachal Pradesh. In retaliation an estimated 60 leopards are reportedly killed every year in Himachal and Uttarakhand. The High-Powered Committee (HPC) Report on the Char Dham Pariyojana in Uttarakhand warns that rare, endangered and threatened (RET) species will be at even higher risk of being killed due to speeding traffic on roads through forested areas in the plains districts of the state.

The benefits of hydroelectric projects (HEPs) are very well known and advertised by governments in power. But HEPs in the central-western Himalaya have also shown severe life cycle environmental and social impacts. These include deforestation, disruption of river flows, ecosystem damages, reduction of ecosystem services, destabilization of slopes, water, air and noise pollution and loss of lands, homes and livelihoods during the various stages of construction and post commissioning. Mitigation measures like sustenance of environmental flows, compensatory afforestation, construction of fish ladders to minimize disruption of fish migration patterns and resettlement and rehabilitation of displaced populations are neither adequate nor satisfactorily implemented in practice.

The HEPs in Himachal Pradesh and Uttarakhand have been designed to extract the maximum amount of water, often leading to dry riverbeds between the dam and the powerhouse

– a distance stretching from two or three km to almost 30 km. They totally destroy the biota and the riverine biodiversity. On many large rivers in the region, a series of dams or barrages have been planned or built, without any comprehensive assessment of their combined environmental impacts, such as fragmentation of the river. Thus, a series of barrages and dams on River Bhagirathi between Maneri in Uttarkashi district and Koteshwar in Tehri Garhwal have disrupted the Bhagirathi's free flow over half its course from its origin to Devprayag, where it meets the Alaknanda to form River Ganga.

Serial dams on a river limit the populations of migratory species to specific stretches. At one time *mahseer*, the popular game fish, could be found in the Alaknanda as far upstream as Karnaprayag. The Chilla HEP downstream of Rishikesh has already restricted the mahseer's access to its main spawning stretch on R. Nayar, a rainfed tributary of R. Ganga. If the HEPs currently planned upstream of the Nayar-Ganga confluence and upstream of Devprayag get built, mahseer will effectively disappear even in Srinagar (Garhwal), 70 km downstream from Karnaprayag.

Loss of free-flowing water degrades natural water quality. A comprehensive study by the National Environmental Engineering Research Institute (NEERI) revealed that the Tehri dam has severely diminished the very high self-purifying capacity of *Gangajal* in the Bhagirathi, attributed to the presence of sediments brought down from the Higher Himalaya. Another independent study conducted by the late Dr. G.D. Agrawal and scientists at People's Science Institute, showed a cumulative negative impact of multiple dams on the self-cleansing and self-purifying capability of R. Bhagirathi. Scientists of the Central Pollution Control Board (CPCB) bio-monitoring 11 rivers in Uttarakhand concluded that barrages 'have drastically changed the ecological sustainability of rivers in the state'.

Large volumes of overburden, muck and debris generated while building approach roads, quarrying for construction materials, tunnelling and dam construction are routinely dumped in rivers, in open violation of rules in the Environmental Protection Act. They increase the water's turbidity, cut off light to deeper levels and reduce the abundance of the river's biota. The Experts Body set up by MoEF & CC on the direction of the Supreme Court to assess the environmental and social impact of HEPs during the June 2013 floods disaster in Uttarakhand cited several such examples.

Mass-wasting or landslides are frequent manifestations of Himalayan fragility. Blasting through rocky slopes with explosives during road construction, quarrying and tunnelling, adds to the natural slope fragility and often causes slope failures, damage to extant civil structures and disturbance to ground water resources. In November 2007 a large arch-shaped section of the slope slid about 5-7 m at Chãyeen village, near the mouth of the head race tunnel of the 400MW Vishnuprayag HEP, during pre-commissioning tests. The slope failure destroyed houses, trees and fields, caused a road collapse and threatened the power house downslope. Twenty-five families were rendered homeless. Villagers blamed subsurface leakages and seepage from the tunnel for the disaster, as in the case of similar failures at other projects. News reports said that the project developer had deposited Rs 80 lakhs with the district administration without clarifying whether this was payment of a fine or compensation for the damages.

The rim of the Tehri reservoir is riddled with landslides due to slope collapses as the reservoir water level rises and falls during the year. In 1999 the Geological Survey of India identified vulnerable zones around the reservoir rim. THDC, the project developer, chose not to implement the report's finding, resulting in much suffering for the local people. Most of the affected communities demanded that they be relocated at safe and desirable locations in the plains districts of Uttarakhand. But the state government and THDC, the project developer, have found it difficult to provide new lands there.

Resettlement and rehabilitation of projects-affected populations has been a continuing problem, because the policy-making has never involved the affected people. This is particularly true of controversial projects that have had long gestation periods like the Renuka dam in Himachal Pradesh and the Lakhwar-Vyasi HEPs in Uttarakhand.

Pilgrimage to the sacred shrines in the region began increasing gradually after Adi Shankaracharya (*c.* 8th century CE). These traditional *teerthyatris* were austere. The ascetic and single-minded pilgrims came with just what they could carry over long distances and left little more than their footprints. They stayed in temples along the routes, bathed in temple *kunds*, absorbed spiritual knowledge from saintly persons and gradually prepared for a divine union at the shrine. They sustained and spread the region's Dev Bhoomi reputation.

The early pilgrimages to Kedarnath, Badrinath and Kailash Mansarovar were synchronized with the Indo-Tibet trade. Indian traders from the Higher Himalaya reached Tibet in June or July and returned in October. The women and

children who stayed behind, provided hospitality to the pilgrims who may have annually numbered only in double digits.

Temporary *chattis* or community inns emerged during the 15th or 16th century when local rulers began to endow land to the villages to meet the temple and chatti expenses. Thereafter the annual number of pilgrims to Kedarnath and Badrinath rose steadily into hundreds. Tribal Bhotiya traders continued to organize the Kailash Mansarovar pilgrimages.

After World War I the number of annual pilgrims rose into thousands. Holy persons like Baba Kali Kambli Wale and rich patrons built *dharamshalas* along the Char Dham routes. Until the 1950s, however, only wandering ascetics and devotees who could afford a travelling entourage undertook the arduous Char Dham yatra.

In the 1960s, after the border conflict with China, access to shrines in the region increased with the introduction of motorable roads. Soon buses, jeeps and cars brought devotees who could afford the trip to the nearest points of the shrines. Today, vehicles ply up to the Badrinath and Gangotri temples while Yamunotri and Kedarnath are only 6 to 14 km from the nearest motorable road. For more than a decade now wealthy visitors fly in helicopters from NH 109 to Kedarnath, rather than walk the last 14 km from Gaurikund.

India's unfolding transportation and communications revolutions have energized a booming religious tourism. The number of believers and tourists visiting Badrinath swelled from 75,000 in 2006 to over 595,000 in 2012 and over 1.2 million in 2019. Tourism has overwhelmed the sacred pilgrimage.

Ironically, the Char Dham Pariyojana in Uttarakhand, designed to promote religious tourism may end up as the biggest desecrator of the Nature conservation culture and traditions in the state. In the Bhagirathi Eco-Sensitive Zone – from Gaumukh to Uttarkashi, nearly 10,000 deodar trees could be felled in one 11 km stretch if current plans are finally sanctioned. In local belief this forest represents Bhairav Nath, the sentinel of the Gangotri temple. In Lohaghat and Champawat towns, bypasses are being unnecessarily routed through avoidable deodar forest routes, despite recommendation to avoid doing so by most members of the HPC. The Lohaghat forest which helps recharge the town's groundwater supply has been sustained by the Kali village Van Panchayat. Slashing through it will discourage communities from undertaking nature conservation and protection initiatives.

Many local roads are routed through forests even when shorter routes that avoid the forests or minimize tree-felling are available, as planned once. At a recent meeting, I learnt that the people's protest in Dang village had successfully forced the local authorities to build the road through the shorter route and thereby ensure minimal tree-felling.

Exploding urban growth and tourism are overwhelming carrying capacities in the cities and popular summer tourist destinations. Summer water crises in Shimla, Dharamsala, Mussoorie and Nainital among other towns make national headlines year after year. On 12 May 2022 the National Green Tribunal (NGT) ordered that the Draft Development Plan, Shimla Planning Area 2041 be put on hold, stating that it would damage the rule of law and have disastrous consequences for environment and public safety. The plan proposes to permit construction of additional floors and new constructions in areas, forbidden by earlier NGT orders.

State governments are widening urban roads with a vengeance, decimating tree-lined avenues. In Dehradun city about 13,000 trees, including mature sal and fruit-laden trees are being cut. This is in addition to the planned felling of 10,000 trees for expanding the Dehradun International Airport. Stay orders have temporarily halted tree-felling at some locations.

Climate changes such as decreasing snowfall in the winter and reduced summer discharge in rivers, decrease water available for domestic use, irrigation and power generation. Himachal once generated surplus power from rivers fed by melting glaciers and snow during the summer season. Now it often has to purchase power. Changing climate and rising temperatures are adversely impacting the flowering of apple trees, leading to a gradual decline in apple production, a major contributor to Himachal's rural economy.

The sharp increase in landslides and avalanches in Himachal Pradesh and Uttarakhand in recent years is an ubiquitous indicator of the changing climate. While many are due to poorly constructed infrastructure projects, the number of random disasters has also risen rapidly in recent years. According to official data for Uttarakhand in 2015, 33 landslide incidents claimed 12 lives. That number skyrocketed to 972 incidents in 2020, with 25 deaths. In Himachal Pradesh, the number of landslides doubled in 2021 over the previous year.

Thousands of hectares in forested area are affected by fires every year, beginning as early as February and March and desiccating

the soil which runs off during the first heavy rainfall. One reason is that mixed forests have been systematically replaced with chir pine plantations. In Himachal, pine is now said to cover 30% of its forest area.

The economic model implemented in the central-western Himalayan region is the same as elsewhere in the country. It ignores regional strengths and frailties. A powerful nexus of greedy *thekedars* and corrupt or timid officials led by short-sighted politicians, whose horizons are limited to a maximum of five years, is driving an economic growth juggernaut. They conveniently bypass thoughtful policy measures, like the Eco-Sensitive Zones (ESZs), to protect critical ecology and wildlife areas or measures to ensure clean and adequate water flowing in the rivers, often by falsifying data. Most regulatory agencies established by MoEF&CC are mere rubber stamp bodies.

In Uttarakhand's Char Dham Pariyojana, engineers armed with modern technological weapons have slashed through pristine forests, wounding vulnerable Himalayan slopes, to excessively widen highways. Their argument of excessively wide highways for national defense is a false one. The final report of the HPC, accepted by the Supreme Court in September 2020, revealed that the Union Ministries had themselves stated on the basis of ground experiences that defence needs in the fragile Himalayan region are better served by narrower highways that are disaster resilient.

The state's quest for rapid economic growth is nothing short of declaration of war by the state on the Himalayan environment and heritage. It must be seen in conjunction with various legislations being pushed through Parliament by the Union government to weaken existing laws, rules and regulations that safeguard the environment. Emboldened by the Centre's disregard for environmental security, state governments in the region are also violating environmental rules with impunity.

But what about the people of Uttarakhand and Himachal Pradesh? Why are they not rejecting this myopic approach to economic growth? Perhaps it is a combination of several factors: demoralization at their inability to sustain successes like the Chipko movement, or the day-to-day necessity of putting food on the table and ensuring jobs for their children or, perhaps, the lack of effective and inspiring leadership among environmentalists.

Equitable economic development with sustainable environmental security in the mountain region begins with forest conservation and regeneration of local water resources like springs. Along with adequate credit and promotion of science-based climate resilient practices like the system of crop intensification, it can enable remunerative agriculture and horticulture. Trained youth can reap economic benefits from geographical diffusion of home stays and nature tourism. Of course, the latter can only flourish if forests and rivers are healthy. Environment conservation is a *sine qua non* for equitable economic growth in the Himalayan region.

The growing protests against tree-felling in and around Dehradun are being led by younger people. Realizing that today's ecological destruction will be their problem tomorrow, they are taking matters in their own hands. But their protests must expand quickly and strategically among the common people to be effective. Association with older activists could bring political maturity to sustain such nascent campaigns.

Case for a fresh dialogue with the mountains

SUDHIRENDAR SHARMA

Girish Chandar Joshi comes across as a village Pradhan (elected head) who carries the wisdom of his ancestors in calling his village *mahaan* (the ultimate in greatness). And his repetitive attribution of greatness evokes as much admiration as intrigue. 'It reminds not only me but also my fellow villagers that this is the goal we must collectively aspire for', reflects Joshi. Nearly 350 inhabitants in 69 households in village Jajut in Pithoragarh, Uttarakhand, seem to be in agreement with him.

Located in the midst of vastly degraded slopes in this mountainous district, the village is a vibrant habitation and popularly known as 'vaid village' (healing village) for its rich diversity of herbs and experienced traditional healers. Even as he spells out the initiatives taken to minimize peoples' sufferings, he is acutely aware of the region's dilapidated dwellings and abandoned lands on account of large-scale migration. A majority of the leftover households in the village are below the poverty line. As a result, a majority of the villages in the hills are predominantly left with the three Ds – *dalit* (castes who cultivate for absentee landowners), *dridra* (the poorest of the poor) and *devta* (local deity). Had it not been for the belief in the local deity, the village could not have protected its 25 hectares of community forest.

Ever since the forest department withdrew the guard it had appointed to watch over the forest, the villagers have entrusted the control of the degraded forest back to the village deity for the next 10 years. It is now a sacred grove wherein community rights are restricted, but cattle can graze freely.

It isn't as if the villagers are new to the task of protecting the forest, says Joshi. But these traditional custodians had been reduced to mere onlookers after the government appointed paid guards for the forest's protection. Now that the responsibility has returned to the villagers, it will take a while for them to develop a feeling of collective ownership. Leave it to the locals, they know how to pull together locational disadvantages and convert them into opportunities under the divine patronage of their devta!

Joshi's forthright view on the role of outside intervention clearly debunks the assumption that people in the Himalaya are locked in the poverty trap, and need a helping hand to get pulled out of it. Conversely, it is the turn of events in the past few decades that have made the hill communities fall into this trap. Historically, farmers in the hills had put in a tremendous amount of planning and labour into building and maintaining land and water resources from a sustainable

* Sudhirendar Sharma has engaged in understanding mountain development for little over three decades, and wonders why unlike sages and seekers, researchers and planners have continued to perceive mountains differently and often as a problem. Unless the 'idea of mountain' from socio-cultural, spiritual and meta-physical perspective is superimposed on all pervasive bio-physical understanding, mountains may not be the change that we want them to be.

point of view. Had that not been the case, there would not have been any habitation in these hostile terrains. People achieved sustainable lifestyles by strategically rotating diversity, both physical and biological, to counter environmental risks and uncertainties. Micro-climatic variations helped them harvest a variety of crops from small scattered fields at various altitudes – and at different times in the year. In addition to crops, trees and other environmental resources played an important safety function against environmental stresses and exogenous shocks.

Further, it is interesting to note the manner in which rural communities in such hostile environments created local institutions, collectively managed and held on common property to ward off risks. Nowhere, however, did poor communities draw excessively upon environmental resources from the point of view of degrading them. Despite sustaining an eco-friendly lifestyle for several centuries, the people of the hills now find themselves in a poor state. An estimated 50 per cent of the 160 to 175 million inhabitants of the Himalaya live below the poverty line. And, they have been blamed for their present plight.

Consequently, plans to rejuvenate the system have come from outside because there is a widely believed thought that poor people are the cause for environmental degradation and *vice versa*. But such assumptions, which literally have become rules, have been contested from some thoughtful quarters. In a series of studies conducted by the World Bank in South East Asia and Africa, the authors found little evidence that poor rural communities had degraded their environments. In fact, the studies questioned the relative ability of the poor to cause environmental degradation given their low nutritional status and lack of capital equipment. Instead, they refer to other exogenous factors stemming from misguided development policies that led to environmental degradation. Many eco-historians do agree that indeed that is the case because there is no empirical evidence which demonstrates that environmental degradation must follow as a consequence to the existence of poverty in any region.

Another associated issue is related to population *vis-à-vis* poverty in the Himalaya. There doesn't seem to be any direct correlation between population density and environmental degradation. On the basis of available evidence it is hard to establish a direct linkage between high population density and anthropogenic degradation. For some reasons, naturally occurring degradation is often taken to have been caused by anthropogenic factors while the reverse often seems to be true. In the Himalaya, for instance, only about 5 to 10 per cent of soil erosion is caused by human activities. Dynamic geological processes and erosive effects of intense rainfall contribute to the remainder. Not only soil erosion, these dynamic processes lead to other impacts, which are wrongly attributed to human population in the mountains.

Much before population rose to its present proportions, farmers in the hills had done extensive soil conservation work by cultivating terraces and conserving biodiversity – the current buzzword. There are no two opinions on the fact that terraces are a means of conserving soil. This alone explains the fact that erosion had not much to do with the population increase in the past in the Himalayas. Similarly, there are other so-called indicators of degradation, which are not directly related to anthropogenic factors.

The opening of the Himalaya in the early 19th century was the beginning of the systematic exploitation and degradation of the serene Himalayan landscape. People who had fled to the mountains in the wake of repeated invasions had housed themselves ingeniously in the mountains. But the opening of the Himalaya saw this abode of sustainable and peaceful living shattered by mindless exploitation of resources on one hand and thoughtless transport of urban culture and developmental ideas on the other. Without time-series data on the comparative impact of indigenous and extraneous factors the issue will remain a subtext in mainstream discussions.

Interestingly, the process of exploitation during colonial rule has been systematically documented whereas not much is known about the impact of present-day developmental interventions. What was done by the colonial rulers in the guise of peoples' interests is prevalent in the present too. While the colonialists made roads and railways networks to extract timber from the mountains, in the present the same network is being expanded and strengthened to increase tourism without regard for the carrying capacity of the mountain ecosystems. A growing consumptive class of people laps up such initiatives by the state.

Far from addressing the primary causes of mountain degradation, development planners have sought to address the symptoms rather than the primary cause. Technology was viewed as the panacea to all ills, discounting the fact that technology and technological processes in themselves resulted in promoting environmental degradation. Whether it was road building, opening of the mines or

building of hydroelectric power stations, the natural resource base has been at the receiving end. The degradation of this base by external factors directly affected the poor's access to resources. Since the processes that led to technological intervention were at a distance from these powerless people, there was no way the poor of the hills could influence the social and political institutions that were the causative factors behind such adverse effects.

On the contrary, people remain victims of misguided public investments. Tragically, the policy framework for the Himalayas has been dominated by essentially down-stream thinking. Planners sitting in the flood plains tried uniform technological options for the hills. It has neither worked in the past nor is it likely to work in future unless there is a serious effort to introspect on the impact of such technological interventions. There is every reason to believe that much of such an approach has a direct bearing on the *Mountain Perspective* that was proposed by the Kathmandu-based intergovernmental International Centre for Integrated Mountain Development (ICIMOD) some three decades ago which tagged the mountain regions as *fragile, remote* and *marginal*.

Ever since it was proposed, the Mountain Perspective has remained the leitmotif of most research/ development on mountain issues in the region. One of the reasons for it (the mountain perspective) not to be contested had to do with the three features being 'obvious' in the mountain context. Since replacing these 'three words' by searching from the thesaurus would have not added any spice, the mountain fraternity did not see any reason in dabbling with it. As a consequence, the mountain perspective has hung around and for good reasons too! Without doubt, it has given a sense of purpose and legitimacy to those working for and on mountain issues at the grassroots, and on the tree trunk.

Ironically, the guiding mantras (fragility, marginality and remoteness) has helped generate widespread empathy for those engaged in 'development' of the mountain regions. Though not directly credited, the Mountain Perspective has been effective in providing financial backstopping too. One would have imagined that with such a clear perspective on the mountains on offer, the ecology of the region and the economics of its people should have been better. Conversely, however, assessments made in the recent past indicate that fragility and marginality in the mountains have only worsened.

Despite the issue of remoteness having been addressed through communication penetration by both the software and hardware, the mountains remain a region of gross uncertainty. If the mountain perspective was so well orchestrated, what might have gone wrong in putting the driving principles emanating from it into practice? Contrary to common belief, the Mountain Perspective is seriously flawed in the first place. Pitched around the physio-graphic features of the mountains, the narrative had hinged itself on the inherent debility of the region. Could anything built on a weak foundation end up being robust and durable?

At another level, the Mountain Perspective could only provide a constricted view of the mountains. Far from providing an open platform, the Mountain Perspective held *a priori* idea of the region. Neither could researchers view the mountains any different from what they were made to understand nor could policymakers stretch their imagination beyond the mountain perspective. The idea of 'mountains' had got caged within the predetermined boundaries! That the mountains are nature's repository of the best and the beautiful; that its treacherous slopes have riches to sustain humanity for several millennia; and that its peaks are global store houses of life-saving liquid has been subsumed within the overhyped discourse on debility of the region.

The political economy of development unleashed on account of the unquestioned Mountain Perspective led to the perpetuation of an 'us' versus 'them' syndrome. No wonder, most mountain people continue to consider themselves grossly underdeveloped. Built upon the locational inadequacies, the Mountain Perspective had literally ignored the spiritual and cultural threads crisscrossing the peaks and the valleys. That the communities 'belonged' to the mountains and sought to create a living relationship with them was clearly ignored in favour of the shortcomings that got highlighted in development discourses. The self-esteem of mountain people got a severe beating and continues to be so.

If the foregoing narration is any indication, it is time 'the mountain perspective' is rewritten because it has proved its irrelevance. The self-deprecating features 'fragile, remote and marginal' need to give way to positive expressions viz., *rich*, *robust* and *exquisite*. Had the mountain perspective been crafted around such positive expressions, the approach to development would have definitely been different. It would have allowed people in the mountains to play to their strengths and set the agenda for their own 'development'.

It is common knowledge that mountain regions in the country have

been subjected to 'development' that rarely conforms to its geological and ecological exclusivity. To bring the mountain habitats at par with the human development indices of the downstream populace, the influx of systems and technologies from the plains has been unprecedented. Infrastructure, roads, and communications have addressed 'marginality' and 'remoteness' but at a high cost to mountain 'fragility'. Could not the adverse impact of development in the mountains be foreseen?

Mountain research, earlier known as orology, has been part of the institutional research agenda in some 36 research institutions and 24 universities spread across 12 mountain states in the country. Though conducted in public interest, mountain research remains largely accountable to its institutional mandate. No wonder, the mountain regions have become graveyards of failed institutions. Further, none of these institutions have been held accountable to the disasters in the mountains.

Need it be said that mountain research in its present form has failed to live up to the promise of addressing genuine mountain concerns. A significant aspect of the problem has been that the 'mountain research' agenda is set outside of the mountains, mostly by resource-rich academic decision-making policy structures in the capital cities. Unless the mountain universities and research institutions develop a 'mountain curriculum' and 'mountain research agenda' specific to their catchments, the situation is unlikely to transform.

The trouble is that mountain research is not yet a well defined subject like geology, botany or oceanography, and therefore there isn't trained manpower available on the subject. Though 'montology' has been acknowledged as a branch of science to study mountains, it hasn't yet been nurtured as a new discipline. It was during the International Year of the Mountains in 2002 that 'montology' was added as a new term to the Oxford English Dictionary.

Like academic degrees in other subjects, developing montology as a subject of scientific inquiry can help create a cadre of experts who could be held accountable for the issues of the mountain and the concerns of its people. A montologist would definitely be in a better position to provide authoritative response to the mountain issues. Not only will a montologist have greater empathy for the mountains but would fill the much needed gap in getting a better understanding of the mountains.

The failure of the government to issue a 'white paper' on the 2013 Uttarakhand disaster, partly for lack of political will, can also be attributed to the absence of experts who have a comprehensive understanding of the genesis of the disaster of such a scale and magnitude. Given the fact that climate change will have greater impact on the mountains, it is high time that montology is developed as a subject for understanding future exigencies.

Since its dictionary existence hasn't caught on, expecting 'montology' as a possible new academic discipline to work its way through could only be preposterous. Isn't it risking one's own career path in already established disciplines in favour of a yet-to-be-created discipline? Will it not subsume some of the current dominant areas of 'expertise' concerning mountains? There is clearly more to it than just being apprehensive of a fresh 'intrusion' into well entrenched academic/research dominance. Glance at the epistemic structure of development of western science thus far. What emerges is that science was organized both intellectually and institutionally around 'disciplines' in which researchers could develop a high level of 'expertise' in a small area of inquiry. This 'reductionist' approach, often credited to Rene Descartes has proved powerful in areas like quantum physics, molecular biology and medical diagnostics but has impeded investigations of complex systems.

Climate change is one area where the failure of the 'reductionist' approach has made it difficult for scientists to articulate the threat posed by climate change since it lies beyond their expertise. No wonder, climate change has remained a contentious issue among scientists without any clear line of thought emerging. Alvin Toffler had articulated it: 'western science has split-up problems into their smallest possible components, often forgetting to put the pieces back together again'.

One is reminded of Nobel Laureate Ilya Prigogine who wasn't satisfied with merely taking things apart. Prigogine had spent the better part of his lifetime researching trying to 'put the pieces back together again' – the pieces being biology and physics, necessity and chance, science and humanity. Mountain challenges are akin to climate change, both suffering from a 'reductionist' mindset. Montology can thus be developed as a discipline that can address prevailing uncertainty and ambiguity in making a sense of the complex mountain environments.

Developing and organizing montology as an area of academic/research can help us draw some order out of the current chaos – a new dialogue with the mountains.

Understanding socio-economic transitions in the mountains

JAYANTA BANDYOPADHYAY

THE perceptions of socio-economic and cultural transitions in all parts of the world have, for a long time, been guided and promoted by the traditional ideas of economic growth. For some time, however, these perceptions have been facing fundamental challenges to their utility and continuity in the process of policy making for socio-economic transformations in general.

In addition, socio-economic transformations in environmentally fragile and ethnically diverse regions of the world, like the mountains or the deserts, need to be assessed with a conceptual framework much more comprehensive than the presently used one guided by reductionist concepts of economic growth. Accordingly, in addition to such a need to enlarge the conceptual foundations of traditional economics, understanding of the factors that encourage or hinder socio-economic well-being and cultural evolution in fragile regions like the mountains, have to be recognized and internalized in policy making.

This article addresses those factors that relate to these features that distinguish the mountain regions and have not been clearly internalized in the conceptual framework for the assessment and understanding of socio-economic transitions in the mountain regions, including the Himalaya. In common parlance, such tran-sitions have been projected largely as 'mountain development', quite unrelated to the nature of their impacts on the well-being or otherwise of the natural environment or the communities living in the mountain regions. This is why there are frequent instances of conflicts over formally designed interventions and their ground realities in the mountains, commonly projected as 'development'.

One step in the direction of distinguishing transformations in the mountains that promote well-being, both of the environment and the communities, is to distinguish the social, cultural and environmental status of the mountains in comparison with their surrounding plains. During the last few decades, some scholars have tried to articulate and describe the factors that represent the distinguishing features of socio-economic transformations in the mountains.[1] Rana identified several challenges and opportunities for mountain development in the present century.[2] Ramakrishnan et al interpreted that there has been a lack of interest among the scientists in mountain research in such conceptual directions.[3] Rhoades has stressed the

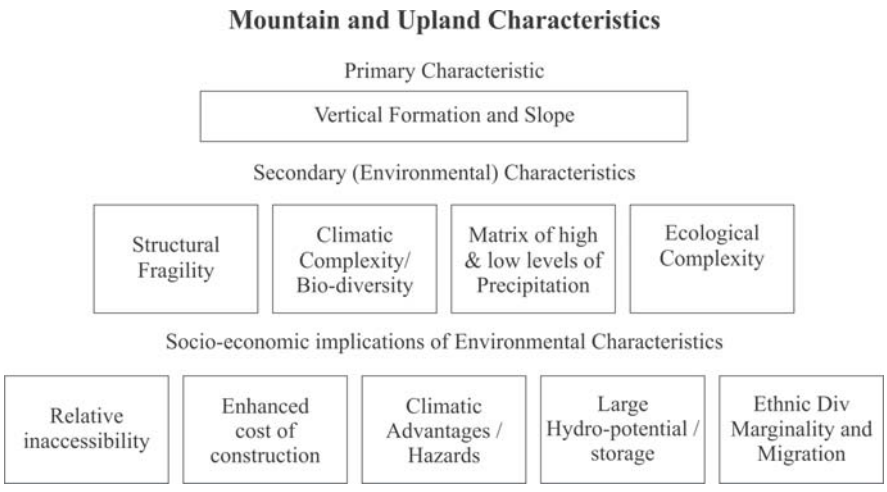
1. N.J.R. Allan, G.W. Knapp & C. Stadel (eds), *Human Impacts on Mountains*. Rowman and Littlefield, Totowa, 1988; M. Sanwal, 'What We Know about Mountain Development: Common Property, Investment Priority and Institutional Arrangements', *Mountain Research and Development* 9(1), 1989, pp. 3-14.

2. R.S.J.B. Rana, 'Mountain Development Towards 2000: Challenges and Opportunities'. Proceedings of the International Symposium and Inauguration of ICIMOD, Kathmandu, 1983.

3. P.S. Ramakrishnan, A.N. Purohit, K.G. Saxena & K.S. Rao, *Himalayan Environment and Sustainable Development.* Indian

need for new and creative thinking on the mountains in the wake of the worldwide attention now being focused on them, after the 1992 Rio Earth Summit.[4]

Notwithstanding such a recognition of the need for novel thinking, planned interventions or other drivers of transformation, have only led to higher levels of new investments, guided by the old conceptual framework that equates development with economic growth. Such concepts have emerged in the context of economic processes associated with in the flat plains and applied mechanically on the mountains. This has resulted in a 'plains bias' in the understanding of socio-economic transitions in the mountains. One significant step in the direction of distinguishing desirable transformations in the mountains from those that are to be avoided.



J. Bandopadhyaya in *Grassroots Environmental Action: People's Participation in Sustainable Development*. Routledge, London, 1992.

In a pioneering work, Jodha articulated several 'Mountain Specificities'.[5] Such ideas encouraged Bandyopadhyay to provide an ecosystem-oriented set of distinguishing features of the mountains and uplands in the form of 'Mountain Characteristics'.[6] These characteristics are described below in this article. In order to facilitate the development of a holistic conceptual framework for identifying desired forms of human interventions in the mountains and uplands, the mountain characteristics are recommended as useful starting points. In this background, the mountain characteristics will be elaborated in the section below.

With the brief background, the various mountain characteristics and their interlinkages will now be presented. This should be seen as an expression based on an evolving analysis. This presentation starts with the query about the most significant environmental factor that distinguishes between the plains and the mountains. Under all conditions, all mountain landscapes are characterized by their vertical formation (verticality) and slope. These are jointly identified as the primary characteristic of all the mountains.

The primary characteristic creates the condition for the emergence and functioning of secondary mountain characteristics, which are divided in two categories. The first type includes the environmental characteristics of the mountains, representing the state and functioning of the ecosystem. The other category includes the implications of these characteristics on the socio-economic and cultural characteristics. The environmental characteristics are integral to the mountains while the socio-economic characteristics express themselves only in the case of the existence of human communities making use of the ecosystem services of the environment.

All these mountain characteristics have important operational implications. At this stage of analysis, however, these characteristics and their implications are mostly indicative and are subject to further in-depth refinement. It is hoped that with such refinements in future, they may directly help in the creation and acceptance of a holistic analytical framework for addressing socio-economic and cultural transformations in the mountains. The primary characteristic of vertical formation and slope are obvious distinctive features of the mountain regions and could be taken to be synonymous with the idea of three-dimensional landscape, as described by Troll.[7]

Rhoades and Thompson have also taken a similar approach to

National Science Academy, Diamond Jubilee Publication, New Delhi, 1994.

4. R.E. Rhoades, 'Pathways Towards a Sustainable Mountain Agriculture for the 21st Century: The Hindukush-Himalayan Experience'. ICIMOD, Kathmandu, 1997.

5. N.S. Jodha, 'Mountain Perspective and Sustainability: A Framework for Development Strategies'. Paper presented at the International Symposium on Strategies for Sustainable Mountain Agriculture, ICIMOD, Kathmandu, 1990.

6. J. Bandyopadhyay, 'From Environmental Conflicts to Sustainable Mountain Transformations', in D. Ghai, and J. Vivian (eds.), *Grassroots Environmental Action: People's Participation in Sustainable Development*. Routledge, London, 1992.

7. C. Troll, 'Comparative Geography of the High Mountains of the World in View of landscape Ecology', in N.J.R. Allan, et al. (eds.), *Human Impact on Mountains*. Rowman and Littlefield, Totowa, 1988.

describing the distinctive features of the mountains, providing the starting point for a new and innovative approach to the understanding of transformations in the mountain regions.[8] The introduction and description of the secondary mountain characteristics as emerging from the primary one, is an important feature of this presentation. This is seen as a convenient way in which a new holistic conceptual framework for the mountain transformations could be presented in a simple way. The environmental characteristics exist and operate even when there is no presence of humans in a mountain region. For about 60 million years the vertical formation has got built up without any human presence till very recently. However, human inflows have indeed changed the Himalaya quantitatively and qualitatively.

Various ecological processes involving the atmosphere, lithosphere, biosphere and the hydrosphere generate the environmental characteristics of the mountains. Due to their vertical formation, the mountain landscapes have much higher potential energy generating conditions for high levels of morphological instability. Example can be given of the many mass wasting or erosion events, like landslides in the mountains, especially after high rainfall events. In addition, the very tectonic/volcanic processes that contribute to their vertical formation through uplift or accumulation of lava on land, inflict a great deal of structural fragility. Structural fragility, here, is seen as the first among the four environmental characteristics of the mountains. This characteristic needs to be understood in-depth and given due importance while designing engineering interventions in the mountains, among others the construction of roads or dams, expansion of farmlands and recreational parks.

Closely linked with their vertical formation, is the meteorological role of the mountains as the climate maker at both the macro, meso and micro spatial levels. The atmospheric circulations interact with the vertical landscape and create areas with scanty and high levels of precipitation. This is usually seen as rainfall but in high altitudes, there will be snowfalls also. The altitudinal zones, aspect of slopes, sunlight hours, rainfall direction and many meteorological conditions, all generate a great mosaic of micro-climates in the mountains including extreme climatic conditions causing floods and water scarcity. The climatic diversity further generates favourable conditions for rich biological diversity in the mountains. The climatic and biological diversity conditions are jointly identified as the second environmental characteristic of the mountains.

At a macro level, an extension of this categorization may divide mountain regions as low and high precipitation areas, as in the case of the Tibet Plateau with annual precipitation of about 400 mm and the south aspect of the Himalaya with annual precipitation of about 2500 mm.[9]

In the backdrop of these environmental characteristics, the mountains have a complex ecological status. This complexity is recognized as the fourth of the environmental characteristics of the mountains. Vertical formation as the primary characteristic and the environmental characteristics are omnipresent when mountains and uplands are concerned. However, they have very significant implications when humans start to intervene in the mountain regions for satisfying their socio-economic aspirations. In the section below, these implications will be described as socio-economic characteristics. They play crucial roles in the design of human interventions in the mountains aimed at promoting well-being of the environment and the communities of the mountains.

While the concepts of economic growth in general will change in the coming decades as a result of the emergence of new concepts in economics, the process of assessing the impacts of human interventions for socio-economic well-being and environmental stability need the internalization of a different set of parameters, which are identified in this article as the Mountain Characteristics. These characteristics have significant influences in the shaping of socio-economic transitions and environmental stability/instability in the mountains and uplands. With the consideration of these implications, backed by an updated perception of economics in general, it will be possible to generate a new conceptual framework for socio-economic and environmental well-being in the mountains and the uplands, opening the process of a more accurate and effective redefinition of 'mountain development'.

Due to their vertical formation and slope, mountains and uplands are characterized by greater inaccessibility, when compared with the plains. Human interventions in the mountains and uplands to reduce this inaccessibility is as old an effort as human presence in these regions. In this process came the walking paths for humans, the horse tracks, ropeways, the rough roads for hardy vehicles, the multi-lane tracks for

8. R.E. Rhoades & S.I. Thompson, 'Adaptive Strategies in Alpine Environments: Beyond Ecological Particularism', *American Ethnologist* 2, 1975, pp. 535-51.

9. Jayanta Bandyopadhyay and Sayanangshu 'Modak, Governing the Water Tower of Asia'. Observer Research Foundation, Monograph 25, March 2022, pp.16-17. https://www.orfonline.org/research/governing-the-water-tower-of-asia/

high-speed luxury automobiles and finally the helicopters, infusing a continuous decline in the inaccessibility of the mountains.

This array of technological advancements is considered, in the received perception, as an element of 'mountain development' but who gains and who is the loser in this transformation is not openly assessed. The mountain communities want to reduce inaccessibility for easy access to hospitals, schools, employment, etc. in the plains. The interest in the plains is in the replacement of local village economies by an expansion of the market system operated from the plains, followed by easier access to natural resources of the mountains and uplands, like water, timber, medicinal herbs and cheap labour.

The gradual but inevitable collapse of the barrier of inaccessibility has been the flag-bearer of traditional concept of mountain development. Within the limited scope of this article, a longer analysis of the political economy of this decline of inaccessibility of the mountain areas, like the Himalaya, is difficult, notwithstanding the fundamental importance of such an analysis.

In addition to inaccessibility, physical movement in the mountains and uplands is made more difficult and costly, by their vertical structure. As a result, the construction related movements have to often work against the gravitational force. Materials and equipment for any structural construction in the mountains and uplands have to be carried upwards against gravity over long distances. This increases the capital requirement of such projects, as opposed to in the plains. At the level of the communities, people in the mountains and uplands have to use muscle power for long hours in a day for their livelihood. This needs a fundamental modification of the traditional economics of transportation and construction in the mountains. Such a new economics will be most useful in the assessment of human interventions.

The climate processes in the mountains are much more complex than in the plains. In the context of the Himalaya, the data base on this climatic matrix is quite insufficient for analysis, leading to the region being described as a hydrological black box. This lack frequently leads to catastrophic extreme climate events, leading to heavy losses to communities or structural projects. Example may be given of the Kedarnath disaster in June 2013 or the more recent, flash floods in the Amarnath area, that caused extensive loss of life and property.

The altitudinal zones existing in the mountains often provide a natural capital for the promotion of leisure tourism from the nearby plains. In the case of the Himalaya, the small towns established by the British from Darjeeling in the East to Mussoorie in the west, have now become hill stations that get heavily congested by people from the plains in the summer months of May and June, bringing great economic growth to these locations. Spatial climatic variability is extremely high in areas with low rainfall and high rainfall (including hail-prone areas) forming a grand climatic mosaic. The land use and cropping pattern needs to be adapted to such a matrix, as opposed to the plains.

Those parts of the mountains and uplands that receive large precipitation, as snow or rain, have the potential for hydro-power generation providing a good option for ensuring well-being by the governance of hydro-projects following the mountain characteristics. In the absence of such a recognition, hydropower projects often have become objects of popular opposition. More recently, the water potential and storage capacities have linked the mountains and the plains below, with the suggested arrangement of 'Payment for Ecosystem Services', bringing in a new dimension to promoting well-being of the environment and the communities of the mountains. With global warming and climate advancing undiminished, the hydrological picture of the mountains, including the Himalaya will become more challenging.

Ethnic diversity, marginality and migration are probably the most important socio-economic characteristic of the mountains and the uplands that needs to be most seriously internalized in the new conceptual framework. Mountains and uplands host a wide ethnic diversity while acting as a barrier to the rapid demographic movements. Pushed by their relative inaccessibility and energy intensity of movement, mountain landscapes encourage human settlements to be small and scattered. This, in turn, causes marginality of the mountain and upland communities. On the other hand, the societies and economies in the plains, generate strong economies and market forces, attracting people to migrate from the mountains to the plains for jobs, mainly as manual labour. The handling of this marginality thus is key to the generation of a new conceptual framework for assessing interventions to promote well-being of both the communities and the environment.

As described above, the concept of Mountain Characteristics will be most useful for the creation of a new and more accurate conceptual framework for addressing and assessing well-being in the mountains, like the Himalaya.

Globalization and food futures in Ladakh

HELENA NORBERG-HODGE

I FIRST arrived in Ladakh in 1975, intending to spend only six weeks there to help make a documentary about the traditional culture. I was trained as a linguist, and having fallen in love with Ladakh, I decided to stay on to work on the language. At that time the Ladakhis seemed happier and healthier than any people I had ever encountered. As I travelled throughout the entire region, I saw no sign of hunger nor obesity, and found that people were generally fit and healthy virtually until the day they died. And the Ladakhis described themselves as having everything they needed; 'za-bos, thung-bos' was a commonly heard phrase – 'self-reliant in food and drink'.

In the traditional Ladakhi farming and food system, the sun provided the primary energy, enabling plant growth, muscle-based labour power and fast-flowing water for milling and irrigating. The fertility of the soil and crops came from recycling of manure and compost into the fields and from minerals in the glacial melt-water. 'Packaging' – if any – was in the form of hand-made woolen sacks, wooden and clay vessels, willow baskets, and masonry granaries, all of which could be safely returned to the soil after they wore out. Transportation of the crops was done with muscle power, and cooking done with local renewable fuels like dung cakes or wood sticks.

Care was taken to conserve pasturelands through rotational grazing, and farmers tried to minimize harm done even to insects in the fields. The ecological footprint – meaning total ecological impacts including energy and water consumption, waste generation, etc. – was very low. In current terms, we could say that the traditional Ladakhi farming and food system was solar-powered, zero-external input, zero-waste, closed-loop, and sustainable.

In succeeding decades, India became integrated into the global economy after embracing neoliberal economics, and Ladakh in turn became further integrated into the Indian economy. A few decades of exposure to the 'modernity', globalization, mass tourism and other forces introduced by this seismic shift have had profound impacts on the local food culture. Because of these forces, Ladakh is no longer self-reliant in basic foods, but has like most places in the world become import-dependent. A deluge of imported packaged foods are dominating the menus and the shops. Diets, food preferences and habits are changing and homogenizing accordingly,

affecting people's taste buds – especially the younger generation. This excess of processed food is quickly leading to a public health crisis of non-communicable diseases.

Beginning in the 1970s, subsidized ration foods flooded into the region, undermining local grain and cooking oil economies. The government at the time started promoting pesticides like DDT that had been outlawed in the West, as well as a narrow range of species of crops and animals; they brought in Jersey cows which were not suited at all to the climate. People were exposed to consumer messages that denigrated traditional, land-based living and glamorized the urban, western consumer culture. Development, advertising and tourism made young Ladakhis in particular look down on their own culture as backward and primitive. They rejected the food their parents and grandparents thrived on, in favour of packaged and processed, imported food. Such corporate-industrial food itself was penetrating every corner of India only because of liberalized trade policies based on orthodox neoclassical economic dogma embraced by the country's policy elite.

In the early days, even school teachers – sent up from India – would scold their Ladakhi students for eating traditional staples like ngamphe (roasted barley flour), telling them such food would make them stupid. The opposite was of course closer to the truth. The foods that were being sold as symbols of 'progress' were in fact empty of nutrients and positively harmful. The toxicity of ingredients such as trans-fats, processed sugars and chemical preservatives is increasingly well known, especially in the western world, where, after generations of exposure to corporate food, people are experiencing serious consequences. Epidemics of diabetes, heart-disease and cancer are only the tip of the iceberg; increasingly, studies are linking the consumption of nutrient-poor, highly processed foods with rising rates of auto-immune disorders, depression and anxiety.

Another worrisome change ushered in by the modern, globalizing development paradigm has been the decline of villages and the farming-pastoralism systems that sustained them for centuries. The growth of tourism, the army, and competitive education have combined to drain young people, and young men in particular, out of the villages and into Leh, or even further away. As a result, there is less farm labour available, and more farming work has fallen on village women and paid labour. Many fields that were once lush and green in the summers today lie fallow for lack of people to work them.

With fewer people, livestock herds have decreased significantly, and in the case of goats and sheep nearly disappeared from many villages. This in turn has reduced the amount of rich, organic local manure available for soil and crop nutrition. To make up for this, many farmers substitute highly subsidized synthetic fertilizers which pollute both water and air, and are very energy-intensive to manufacture from fossil fuels. Synthetic fertilizers also disrupt the availability of natural nitrogen in the soil, which requires more fertilizers – a chemical addiction. Besides the loss of livestock manure, the shift to flush toilets and septic tanks accompanying tourism – especially but not only in Leh – is also depriving the soil of rich human manure from traditional compost toilets.

To meet the growth demands of tourism, there is a construction frenzy in Leh that is transforming the ecological landscape of the town. In and around Leh, tourism is leading to a rapid loss of fertile land as it is getting built over with hotels and guest houses. This irreplaceable loss reduces self-reliance in food and increases dependence on imported foods. Scores of trucks carrying vegetables devoid of nutrients roll in every day, spewing out tons of carbon, while agriculture lands in the villages lie fallow due to lack of a labour force. Such dependence increases vulnerability in the case of any disruptions (like fuel shortages, or road closures) in the transportation network across the Himalaya.

The decline of agriculture is also seen in the reduction of diversity in crops including pulses, cereals and pseudocereals like buckwheat (although efforts are slowly being made to bring back buckwheat). Fewer local pulses like the traditional peas and black beans in Ladakhi fields and kitchens diminishes the health of the local diet as well as local soils. Pulses naturally fix atmospheric nitrogen into the soil, so when they are planted there is no need for nitrogen fertilizers. Without them, however, an important source of natural fertility is lost. In terms of oilseeds, whereas Ladakhis formerly cultivated local mustard more extensively and produced much of their own edible oil, today mustard farming is also declining. Commercial edible oils, packaged in plastic bottles and trucked in from the Indian plains are now widely used in Ladakhi kitchens.

Perhaps the worst and most visible impact of imported industrial food is plastic packaging waste, which is now accumulating across Ladakh at alarming rates, seen in streams, villages, mountains and in a ghastly open dump in a valley adjacent to Leh.

Plastic, like fertilizers, is made from fossil fuels, and is non-biodegradable. There is no 'good' way to manage such waste material. Whether it is littered or collected by municpalities and dumped elsewhere, it harms livestock and wildlife, both through ingestion and entanglement but also by contributing to uncontrolled growth in feral dog populations. When it breaks down into tiny fragments, it contaminates soil and water, eventually entering the food chain. If it is burnt, the smoke contains toxic gases that harm public health.

These are some of the interlocking destructive consequences of the dismantlement of a local food economy and its rapid substitution by a commerical, corporate-dominated, import-dependent industrial food economy – what Ivan Illich once termed the 'war against subsistence' that has characterized much of the colonial and then 'development' eras. Food self-reliance has often, perversely, been considered a metric of poverty by modernizing governments, while replacing that with cash incomes and commerically purchased food is considered a sign of development. Today in India, as in most countries, we are seeing two diametrically opposing trends – on the one hand, commercial interests, supported by corporate-friendly policy makers, continue to infiltrate even the most isolated villages, pushing people into dependence on destructive food systems and disenfranchising local producers.

On the other hand, however, people at the grassroots are pushing back against the tide and succeeding in creating flourishing alternatives. After witnessing first-hand the disturbing changes ushered in on the wake of globalization, it became obvious to me that it was vitally important to counter the romanticized images of western consumer culture and to bring information to the Ladakhis about what was actually going on in the West. Together with local leaders I helped to set up the Ladakh Ecological Development Group and the Women's Alliance of Ladakh. Along with promoting organic agriculture, renewable energy and respect for Ladakhi culture, we organized village meetings, conferences and seminars that raised awareness about both the harmful effects of processed foods and about the health benefits of local alternatives.

In recent years, more and more Ladakhi food restaurants are opening up in the capital of Leh, and young people are beginning to revalue what their grandparents once took for granted. The local government's new agricultural vision and policy is to make Leh district fully organic within the next decade, and as a result, synthetic fertilizer use is decreasing and pesticides are being phased out. The traumatic experience of the pandemic and lockdowns shocked many people into a new awareness of the vulnerability of reliance on commercial imports and rampant urbanization, and conversely of the urgent importance of revitalizing local food production, villages, and food systems.

As climate change and the spectre of disappearing glaciers looms as a major challenge to local agriculture, efforts are underway to revive drought-resistant crops. People are increasingly realizing that local food cultures not only protect the health of the Ladakhi people, but also provide a vehicle for cultural revitalization, stronger local economies and genuine ecological sustainability.

Problems of a model state

KULBHUSHAN UPMANYU

Himachal Pradesh is India's western Himalayan state with a population of 70 lakh. It is hailed as a model state for having attained important developmental goals. The state borders Jammu and Kashmir in the northwest, Ladakh in the north, Uttarakhand in the east, and Punjab in the southwest, along with Haryana in the south. The districts of Kinnaur and Lahaul-Spiti in Himachal share their borders with Tibet.

The state has a diverse climate ranging from tropical, subtropical, temperate, cold temperate, to trans-Himalayan dry cold desert. Himalaya, as is well known, is the youngest mountain range which is still in the making, hence very fragile. Most of the areas of the state fall under zone IV and V that are seismologically most active. The high seismicity of the Himalayan region is rooted in its recent orogenic evolution, as a result of which the Himalaya is still rising. The estimates of this uplift vary between two and 10mm/year. While designing any development or construction activity in the Himalaya, this seismic constraint and its fragility needs to be taken into account.

In general, the Himalaya is a fragile, inaccessible, marginalized and glacial-outburst prone zone, along with the attributes of diversity and adaptability. The only development model suited to the ecological sustainability of the zone, is one that does not play havoc with its fragility, and does not disturb the ecology of the seismic zone.

The attributes of diversity, adaptability and niche can be used to plan sustainable activities. Due to its inaccessibility the local communities evolved a sustainable model of development based on frugal resource use. The economies were low input, low output but sustainable. With increased accessibility, new technologies were introduced that disempowered the local communities, as decision making shifted from the local communities to the intellectuals and technocrats sitting in the state or national capitals with little knowledge of mountain ecosystems.

Before getting statehood, Himachal Pradesh was part of a Union Territory, ruled by the Centre. This period heralded favourable governance as the political leadership was

the product of India's independence struggle. However, things changed drastically after the reorganization of the state, as Punjabi dominance in bureaucracy resulted in a changed mindset leading to increased corruption. This permeated deeply into politics and the bureaucracy as vested interests gained prominence over the interest of the state. There is no ideological difference among the political parties ruling the state; it is subservient to the interest of national parties. This myopic view has made it difficult to chart a different developmental strategy that is required to address the challenges of the physical, ethnic and ecological diversity of the state.

This state of affairs paved the way for the introduction of a development model borrowed and copied from the plains. Later on, when the state government took charge, they too continued with the same parochial technocratic view of the plains, rather than adapting it to the needs of a hill region. The Himalaya had to compete with the powerful economies of the plains. This was justified through the development of infrastructure of their choice that resulted in unabated exploitation of fragile hill resources – water, forests and minerals.

This led to the destruction of local livelihoods upsetting environmental sustainability. Local communities opposed these anti-people, anti-ecology developmental polices. Grassroot movements emerged spontaneously against hydro projects, reckless road building, mining and pollution by industries. Despite the opposition, the narrative of a mainstream development model remains strong.

While implementing large infrastructure projects, those causing minimum disturbance should have been the priority. In cases where the scope for alternates was not feasible, the strategy should have been to adopt those projects that cause minimum damage to the fragile ecology. For example, the occurrence of landslides due to steep slopes and seismic activity is common in the Himalaya and any careless intervention can aggravate the situation. The construction of roads to counter inaccessibility has emerged as a major activity across Himachal, raising developmental aspirations on a false model that is self-destructive.

Unfortunately, reckless road construction without improvising a suitable technology for its fragile ecology has played havoc. The debris generated by such activity is dumped downstream in the valleys. This has led to destruction of greenery and precious top soil that is already very shallow in mountain areas. One can find the scars of reckless road construction activity all around Himachal. Despite claims of improved technology for the cut-and-fill method, practically nothing has been implemented. Alternate means of transport have not been considered to reduce the pressure of building roads. Ropeways could become a part of mainstream transport systems in steep and tough terrains, but have only been used to meet the needs of tourism rather than local people.

A report of the expert group of the Planning Commission under the chairmanship of S.Z. Qasim in 1993, had given appropriate recommendation for road construction in the Himalaya: 'No geological disturbance, no land degradation or soil erosion, no interruption in drainage pattern, no unnecessary loss of forestry and vegetation, no aesthetic degradation, no such activity leading to flash floods or leaching of soil nutrients.'

These suggestions remain on paper. Increased vehicular traffic is pressing for wider roads which are not feasible in many areas. Heavy rainfall aggravates landslide damage all the more in areas of construction activity. Kinnaur is an example of such colossal damage, where a great number of hydropower projects have come up with heavy excavations, tunnelling and widening of roads, destabilizing the entire region. Areas like Urni Dhank have been converted into permanent landslide sites that are active even without rains, reshaping the terrain, and made normal transportation difficult and risky.

The recommendations of the Avay Shukla committee formed by the High Court of HP were also not heeded. It suggested that no hydropower projects should be built above 7000 feet elevation. Possibly, the introduction of alternate technology like vortex-technology or hydro-kinetic technology could have given a boost to safer micro-hydro projects with minimum damage to the ecology.

Unfortunately, the present technology of harnessing hydropower has adversely affected the ecological balance and hill livelihoods. Long diversion tunnels, called safer projects, are termed as 'run-of-the-river' projects. These have played havoc with fragile terrain and river ecology. The disputes over water sharing in small rivulets between the micro hydel projects *vis-a-vis* irrigation and drinking water needs have started showing up. However, a number of such projects were cancelled or stalled due to the opposition voiced by people's movements. The Allain Duhangan project in Kullu was fined nine crore rupees for destroying forests. In most cases the micro hydro projects were diverting the only water source available for meeting the needs of farmers and horticulturists. Project construction agencies do not care to

implement the rules and regulations that need to be followed to meet the minimum ecological flow of the stream or river.

Huge projects like Bhakra and Pong have caused enormous suffering and deprivation. Lakhs of people were forcibly displaced with nominal compensation and without any rehabilitation package. The lands allotted to the displaced families in Rajasthan and Haryana are still under litigation in the courts. Some of those who were allotted land faced threats and their holdings were grabbed by hook or crook with the connivance of revenue authorities. Displaced people found officials of state governments in Rajasthan and Haryana unhelpful.

There is great enthusiasm for the cement industry among the ruling class in Himachal Pradesh despite the industry being counterproductive due to its harmful effects on air quality, scenic beauty, and tourism. There are already nine units producing cement in Himachal, and yet more are planned. Though cement production has increased over the years, the high cost of production makes it uncompetitive, besides the deleterious effects on people, including lung disease, silicosis and tuberculosis.

Unbridled tourism development has become counterproductive. A government report in 1993 stated that 'the lush green valleys, emerald meadows, vast ice fields, have now started showing abrasions due to increasing human activity. Hill resorts like Pahalgam, Gulmarg, Shimla, Kangra, Dalhousie, now more or less look akin to modern day slums during the peak summer season. The ecology of the hills is paying the price of mega tourism. Different types of tourism like eco-tourism, religious, health, rural, and adventure tourism need to be properly promoted to reduce pressure on the existing tourism hubs.' We need to promote ecologically responsible and socio-economically beneficial tourism.

Glacial outburst is another cause of floods, causing enormous damage to life and property. Himachal has faced disastrous floods in the Sutlej in the 1990s due to the outburst of a glacial lake in the Parchhu River, a tributary of the Sutlej, causing great damage to life and property in Kinnaur and Shimla districts. In the winter of 2021, Kinnaur witnessed two major landslides in Batseri and Sangla Valley. Many people have lost their lives due to landslides and road mishaps.

The Indian Space Research Organization (ISRO) in collaboration with the Centre for Climate Change, researched the Sutlej, Beas and Ravi River basins. It found that the size of glaciers is changing at a faster pace and the melted glacial debris is forming new dams in the gorges, thus forming new lakes.

The Bara Shigri Glacier spread over 137 square kilometres in 1906 had shrunk 4.33 sq kilometres by 1995. The ratio of glacial melting has increased by 10%. At this rate it is feared that there will be no glaciers left in the next 40 years. The reason for this increase in melting ratio is the outcome of a failed model of development which generates a lot of greenhouse gases and causes atmospheric warming. The ratio of this warming is higher in Himalaya.

The dammed rivers create large impoundments, leading to the formation of methane emissions which contribute more to global warming than carbon dioxide. This may be one of the main reasons for the higher ratio of temperature rise in the Himalaya than the national average. According to analysis done in 2018, it was found that the number of glacial lakes increased by 127 in the Sutlej basin and 72 in the Chenab basin since 2015, posing a threat to life and property and also long-term water availability from these rivers.

An increased emphasis on horticulture has played a positive role in ameliorating local livelihoods in a big way. This was in tune with local needs and ecosystems as amenable climate conditions helped horticultural corps and vegetables. The horticulture boom has remained concentrated in three districts – Shimla, Kullu, and Kinnaur. Later, Solan emerged as a vegetable hub, while Lahaul-Spiti and Shimla progressed in growing off season vegetables using their niche potential wisely.

Other regions could not find niche produce because they are low-lying areas and have to compete with the mainland. The lack of research suitable for these areas is another reason for their lagging behind. Recently, work on aromatic crops for these areas was launched under the aroma mission, a programme of the central government.

Further research in this sector is needed to explore new crops and market opportunities so that a year-round cropping system is evolved to ensure livelihood security. In the horticulture sector, apple is the major crop, which faces competition both from global players and climate change. Therefore, crops diversification is the need of the hour. The universities of Palampur and Nauni Solan are moving in this direction but it has yet to reach the farmers.

Animal husbandry and livestock is a major contributor to augment cash incomes. This sector is under great stress and faces multiple problems. Himachal Pradesh has 67% forest area. Permanent grazing lands are 33.1%. Agricultural land is a mere 12%, i.e. 6.5

lakh hectares and 18 lakh hectares is permanent grazing land. Even so, enough fodder can be grown to feed the livestock population if managed properly.

Unfortunately, faulty forestry policies of monoculture plantations (pine and eucalyptus) have taken a toll of productive grazing lands. Post the Green Revolution, the spread of exotic weeds has destroyed at least 50% of the grazing lands, creating a huge scarcity of fodder, compelling livestock holders to import costly wheat chaff fodder from Punjab and Haryana making this profession economically unviable. This year Haryana has banned the export of fodder making the problem more complicated. As a consequence, the problem of stray cattle is increasingly causing damage to the crops.

The per capita availability of milk is 600 grams which is sufficient to meet balanced dietary norms for the state's own consumption, but for meeting the needs of tourists we must double the production as approximately one crore tourists visit Himachal every year. A well planned, decentralized dairy industry has the potential for self-employment. Sectors like pasture development, cattle rearing, and responsible tourism can potentially generate huge employment opportunities for local people.

Agriculture has its own problems. An overemphasis on chemical agriculture has damaged the shallow hill soils. Fortunately, the government is promoting alternate organic farming practices that need to be implement with caution based on scientific methods. This should be a gradual process, giving sufficient time to the farming community to change mindsets.

The major threat at present is the human-animal conflict. The destruction of mixed forests bearing fruits, fodder, fibre, fuel, fertilizer and medicine has damaged the supply of food for wild and domestic animals, along with the destruction of livelihoods of mountain communities. Therefore, animals like the monkey, wild boar, bear, antelope and rabbit are damaging crops, with stray cattle adding to the problem. This has led to many areas being kept under permanent fallow and loss of farmer's income and livelihood.

Himachal has around 70% marginal farmers with holdings of less than one hectare. Almost 80% of the agricultural land is rain fed, making it a risky activity. This explains the heavy dependence of hill farmers on forest land. Even organic farming demands more farmyard manure that in turn requires better cattle, sheep and goat management. Increasing fodder yields from the forests are essential to meet local demand.

Rain fed agriculture must be given a better deal. Himachal Pradesh's economy is growing at 7% which is encouraging in comparison to the national level. Though the state fares better on the development index, its future prospects are in doubt as it faces ecological disasters due to adopting the path of short-term economic growth without caring for ecological stability. An overemphasis on developing hydropower, setting up polluting industries and mining will only accelerate destabilizing of the fragile ecology.

'Ecology is the permanent economy' is a reality and should not be overlooked in the case of the fragile Himalayan region. It is vital for the supply of ecosystem services including water, top soil, pure air, and climate restoration. Socio-politically, intra- and inter-generational equity is also under threat as we are overusing vital resources and overlooking local livelihoods.

A Himalayan conundrum in Arunachal

MIBI ETE and TONGAM RINA

ARUNACHAL is the eastern bookend of the Himalaya. It is in Arunachal that the mighty Himalaya and the Southeast Asian Massif meld across the highlands of Mishmi and Patkai hills. It is sporadically in the national news, sometimes due to border skirmishes with China, at other times due to the discovery of some new floral or faunal species. In the last years, several environmentally consequential development programmes have been launched in Arunachal, apart from the hydropower development programme. The implications of these programmes have stayed under the national radar. In this essay, we attempt to provide a sweeping overview of the economy-ecology entanglements facing Arunachal today.

Let us start with hydropower. Arunachal's hydropower development programme, rolled out at a breathless speed between 2005-2009, was supposed to add almost 32,000 mw installed capacity to India's power generation within the next decade. The ambition of the Government of Arunachal Pradesh (GoAP) was to maximally exploit the state's hydropower potential, with large-scale participation of private sector players in the development of 100+ medium and large hydro projects.[1] At that time, this programme had triggered proportionate alarm among the country's environmentalists. While at a handful of project sites, local resistance against hydropower development grew, at many others, the projects were cautiously welcomed by the local indigenous communities. Despite the local support, the programme did not move ahead as intended, and not one project out of the 100+ projects launched during this period was realized.[2]

1. In the following years, more MoAs were signed with private developers, but the average size of projects began to decline.

2. This failure had to do with several reasons

In the meantime, other development initiatives of the GoAP took root on the Arunachali soil with greater success. Cash cropping is one such initiative. In many areas, jhum farmers have migrated to tea, rubber, citruses, palm oil, and kiwi farming with government support in the form of subsidized equipment, one-time monetary assistance and easy-to-repay loans. Some villages, particularly in Anjaw and Changlang districts, have abandoned jhum farming altogether in favour of cardamom cultivation. In the initial years, the GoAP had provided market linkages enabling the farmers to sell their produce at competitive prices. This encouraged even more farmers to take up commercial crops as it was seen economically lucrative. Similarly, the uptake of rubber cultivation has been growing rapidly in the last decade. The GoAP plans to scale up the commercial farming sector exponentially.

Another ambitious GoAP programme is the road network development under the Arunachal Pradesh Package for Road & Highways which plans to add 2,319 km length of roads by 2023-24. Other, more mundane, development activities continue apace. New district headquarters and other administrative settlements are being constructed in entirety. To feed the demand for raw materials, villages are leasing out their riverbanks to contractors who remove boulders to nearby crushers which then feed on these boulders and belch out construction aggregates.

Each of these development activities has well known environmental impacts associated with it. The monumental hydropower development programme has caused environmentalists the most concern, and given its scale, deservedly so. Even if only a third of the programme comes to fruition, its consequences within Arunachal and further downstream in Assam will be immense. A single dam alters the life of a river. It is difficult to comprehend what 50 medium and large dams would do to the north Brahmaputra Valley catchment. The projects in Arunachal are technically run-of-river, but they do involve impoundment and result in 'river disappearance' for significant stretches downstream as well as reduced flows for considerable periods of time, thus affecting wildlife. Impoundments can the riverine flora and fauna upstream as well.

The process of project development itself, not to mention submergence, reduces forest cover. This is before considering the destabilizing impacts of climate change on the hydrological regime, as well as the feedback loop between large dams and climate change itself. And then there is the matter of the high seismicity of the region which adds inherent risk to such massive undertaking. If the experience of the Ranganadi HEP is anything to go by, a single dam can destabilize flood patterns.

Though they have gotten less attention so far, commercial agriculture and road construction will have their own sets of environmental impacts. In Arunachal, the commercial crops are mainly based on monoculture plantation. Monoculture plantations can and do lead to a decline of forest cover and biodiversity. The uptake of commercial farming has likely led to increase in deforestation. Since 2017, according to India State of Forest Report published by the Forest Survey of India, Arunachal has reported a decline in forest cover leading all the Northeastern states. The report cites increasing population, developmental activities and practices like jhumming as the reason behind the continued reduction in forest coverage.

Similarly, road construction will lead to some fragmentation of habitats for wildlife. As a secondary impact, roads will also lead to changes in forest cover at their edges. In the short-term, the road construction sites are thought to have triggered deadly landslides because of faulty earth cutting. The direct dumping of muck into the rivers has caused pollution due to turbidity.

In aggregate, these development initiatives could lead to drastic alterations at the ecosystem level, but we do not know of any scientific attempts to model these impacts. In principle, large hydropower development is subject to Environmental Impact Assessment studies, and Impact Mitigation Plans. But other initiatives such as road construction and commercial farming are not subject to environmental governance, or even mandatory forest clearance. On top of it all, the environmental governance regime itself is considered ineffective and the mandatory clearances are considered a farcical bureaucratic formality.

In any case, ecosystem-level changes will likely emerge over a longer time horizon and will be identified and acknowledged a *posteriori*. What we can claim with certainty for now is that there will be significant loss of forest cover and biodiversity. Arunachal is one of the most important repositories of biodiversity in India as well as the world. What is more, the recent trickle of discoveries of new species in the region indicates that much of the biodiversity is yet to be documented,

that had little to do with local politics. One important reason for the slowdown was the drastic fall in market prices of electricity, which made the financial investment in hydropower projects look unviable.

let alone the intricate interdependence of species fully understood.

It is not as if the GoAP is rushing naively and ignorantly into an ecological crisis. Last year, on 13 November 2021, it adopted the Declaration on Climate Change Resilient & Responsive Arunachal Pradesh in the 12th meeting of the Council of Ministers. This was done at the Pakke Tiger Reserve, one of the four tiger reserves in Arunachal and widely regarded as model example of conservation where communities and the union and state governments are considered equal stakeholders. Broadly, it is a response to the sixth assessment report of the Inter-governmental Panel on Climate Change (IPCC) and the Conference of Parties 2030 of the United Nations Framework Convention on Climate Change.

The declaration was drafted purportedly in recognition of 'the increasing body of evidence on the direct and indirect adverse impacts of the ongoing climate change which pose a serious burden on the well-being of all at all ages and sustainable development.' The document has five expansive themes that are a compaction of some of the 17 SDG goals. The first theme of 'Environment and, forest and climate change' emphasises climate-resilient forestry, climate-resilient water resources management, and renewable energy and energy efficiency.

With the stated intent of 'accelerating comprehensive, smart, climate resilient and inclusive development of people and land with its mighty rivers and abundant natural resources', it aims to 'generate awareness and build capacity in judicious use of water' and emphasizes on renewable energy and energy efficiency, increase hydel power production, including through micro/mini/pico projects and increase solar power generation in the state. The document also speaks of installation of early warning systems to monitoring hazard-prone areas with particular focus on hilly tracts along state/national highways, degraded mountain slopes, and areas near hydropower projects or major development sites, indicating a recognition of the risks that the current development path entails.

On paper, the GoAP is not short on good intentions. In practice though, it is willing to bend rules to expedite its development agenda. For instance, it has cited delays in forest clearance as one of the reasons for road and other projects not taking off on time. To this end, it has announced that it will seek de-reservation of some of the forest lands to speed up development work. Besides, for a state government short on cash and options in these neoliberal times, hydropower was and is magic, which will bring in the investment and revenue that will supposedly make the state self-reliant.

Self-reliance was the goal held up by the then Chief Minister Dorjee Khandu to justify the early years of hydropower frenzy. Setting aside the rumours of enormous wealth transfer to private pockets, the goal of self-reliance is hard to argue against. From its birth, the state has been heavily dependent on the Union government's grant-in-aid, state's share of the central taxation and borrowings. For instance, Arunachal's total annual budget outlay for 2022-23 was estimated at Rs 26,000 crores. The estimated resource to be generated by the state, for 2022-23 is just Rs 3035 crore which is mostly through tax revenue, an indicator of the precarious financial position.[3] The GoAP's own projection is that if fully exploited, the state could earn a revenue of about Rs 15,000 crores from hydropower alone.[4] It is clear that the GoAP will forge ahead with its development plans.

Historically, where the state assailed the environment with its development agenda, the local communities came to its defence. In the 1970s and the '80s, the heydays of socio-environmental movements in India, social movements against infrastructure projects and environmental activism could make a common cause. As Sunita Narain[5] noted in these pages two decades ago, this defence was a selfish struggle to protect their own culture and survival which were intertwined with their environment. Thus, the celebrated anti-dam movement, Narmada Bachao Andolan, mobilized the community grievances against involuntary dispossession and impoverishment with the Adivasi discourse of 'jal, jangal, jameen' (water, forest, land) and helped fire up a transnational debate on the nature of development itself.

Given this, it was not unreasonable to hope that in Arunachal too, the indigenous local communities would reject the large hydropower projects and other disruptive development initiatives. But history did not repeat itself in Arunachal and by and large, communities in Arunachal have welcomed the various development initiatives, cautiously if not enthusiastically. But if environmentalists are disappointed, they must sympathetically understand the response of the local communities considering two main historical processes.

3. https://www.arunachalbudget.in/docs/glance.pdf

4. https://arunachaltimes.in/index.php/2020/02/12/seminar-on-hydropower-development/

5. Sunita Narain, 'Changing Environmentalism', *Seminar* 516, August 2002, pp. 15-20.

The first is the process of policy changes for social impact mitigation triggered by the 20th century activism of the broad social and environmental coalition. Their activism forced the Government of India to acknowledge the interests of the environment and the affected local communities. In response, it put together some semblance of environmental governance framework, and designed policies to mitigate the social harm and impoverishment caused by development projects. In Arunachal, a Resettlement and Rehabilitation Policy[6] was formulated in 2008 based on the National R&R Policy 2007. On the calculus of costs and benefits, this policy tipped the scale in favour of benefits for the communities. At several hydropower development sites too, the potentially hefty compensation packages have given communities a reason to evaluate such projects in a positive light.

This decision in turn must be understood considering the years of development process of the Government of India in the frontier region. Arunachali communities today are firmly enmeshed in the national and international markets of commodities, ideas and popular culture. The social, economic and political initiatives undertaken in the name of nation-building have repatterned the indigenous lives into a hybrid between the land-based subsistence and the market-based aspirational. Although a significant proportion of the communities continue to depend on their traditional natural resources for sustenance, other necessities of life such as healthcare and education for their children require a cash income. A few thousand rupees can determine the ability to get vital medical attention in a faraway town, something that can literally make the difference between living and dying.[7]

Opportunities to earn these few thousand rupees are hard to come by in a poor state like Arunachal. So, when development initiatives emerge, they are valued as opportunities, not threats. Commercial farming is an opportunity to earn cash income. In many parts of the state, the launch of the R&R Policy, road construction has also meant generous compensations in lieu of loss of land due to the Trans-Arunachal Highway project. Roads also mean connectivity and access to healthcare and education, and markets. Aside from monetary compensation, hydropower projects bring in short-term employment, contracting opportunities even during the exploration stages.

Here is a crude illustration of the benefits for local communities of choosing short-term economic gains over prioritizing conservation and environment protection for the benefit of humanity and the planet: one hectare of forest under a carbon sequestration scheme in the neighbouring Meghalaya will earn about INR 22,000.00 over 30 years.[8] In comparison, a hectare of forest land acquired for hydropower construction in Arunachal was given a compensation of about INR 14,00,000.00 in 2022.[9] Besides, the ecological risks and impacts are likely to unfold at a longer time span across a wider geographical area. The community decision to trade their forests for monetary compensation in the present is not just greed or short-sightedness, but a pragmatic choice.

This is not to say that the Arunachali society is unanimous in its prioritizing of economic opportunities over the environment. While plantations and roads are small-scale initiatives continue to avoid public scrutiny, hydropower development generated controversy and debate right from the start in early 2000s. While some see it as rescue from perpetual dependence on central dole-outs, others were opposed to it because of its impacts and risks.

At a few notable sites, such as the Dibang, Tawang and Siang, sections of the local communities have mounted staunch resistance against a few development projects. The then 3000mw Dibang Valley Multipurpose Project was met with resistance led by the All Idu Mishmi Students Union and the Idu Mishmi Literary and Cultural Society. Between 2007 and 2013, public hearings were postponed several times due to the stiff protests by the Mishmi community,[10] although bad weather conditions were frequently cited as the official reason for the repeated postponements.

6. The Arunachal Pradesh R&R Policy 2008 was later superseded by The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2014.

7. Mibi Ete, 'Hydro-dollar Dreams: Emergent Local Politics of Large Dams and Small Communities', Geographies of Difference: Explorations in Northeast Indian Studies, 2018.

8. This calculation is based on the figures gleaned from a REDD+ Project in the Khasi Hills in Meghalaya. https://cotap.org/projects/khasi-hills-india-community-redd-carbon-project/

9. This figure was obtained from a member of a community that recently received compensation awards.

10. Raju Mimi, 'The Dibang Multipurpose Project: Resistance of the Idu Mishmi', Water Conflicts in Northeast India: A Compendium of Case Studies, 2013, pp. 111-120.

In Dibang Valley, the resistance eventually dissipated, partly due to government intimidation and coercion, and partly due to the changed cost-benefit calculus for the directly affected communities. It would not be wrong to suggest that the Dibang protests forced the government to seriously consider the issue of dispossession of local communities, and thus precipitated the formulation of the State's Resettlement and Rehabilitation Policy 2008.

In March 2013, two public hearings were held for Lower Dibang Valley and Dibang Valley districts. The environmental clearance was granted on 19 February 2015, by the Ministry for Environment, Forests & Climate Change (EF&CC) in February 2015. However, the Forest Advisory Committee rejected the proposal noting that the 'ecological, environmental and social costs of diversion of such a vast track of forest land, which is a major source of livelihood of the tribal population of the state, will far outweigh the benefits'. Still, in July 2019, the union government approved the 2880 mw Dibang Multipurpose Project, paving way for the construction of the world's tallest concrete gravity dam. In early 2022, compensation for displacement and land loss were disbursed to project-affected families.

In two other valleys – Tawang and Siang – the resistance has been durable and steadfast. In Tawang, the monk-led organizations, Save Mon Region Federation and the Society for Development of Cultural & Education, Sera Monastic University, Karnataka, were at the forefront of the protests. The monks received massive support from the people of Tawang who were already angered that holy Buddhist sites were endangered by the hydropower plans. They were particularly hurt that the hydropower developers managed to obtain no-objection to site investigations from a few contractors and political leaders without seeking the consent of the people. In Siang Valley too, a consortium of organizations such as Forum for Siang Dialogue, The Nyiko Bachao Forum (NBF), Dam Affected People's Forum of Siyom-Sirit (DAPFSS) and Siang Bachao Federation have steadfastly rejected any attempts to conduct public hearings.

On its part, the GoAP has been intolerant of dissent and resistance against hydroelectric power. In the past, the GoAP under various chief ministers displayed its willingness to use state sanctioned violence and intimidation against protestors in Dibang Valley, Siang Valley and Tawang. At all three sites, there were incidents of police firings where protestors were injured. In the Dibang Valley, the protesting communities were met with state-led intimidation and accusations of being Maoist sympathisers that culminated in a violent incident in October 2011 when a Special Task Force drawn from several government security services opened fire inside a Durga Puja pandal. In Tawang, during a police firing, two protestors were killed. In Siang too, activists reported state-sanctioned intimidation by security forces. Despite this, so far, the collective opposition to mega-hydropower development has prevailed in Siang and Tawang.

Overall, the GoAP has begun to take a reconciliatory public stance on large hydropower. When the Niti Aayog proposed the gigantic 11,000 mw Upper Siang Project on the Siang River, the current chief minister demurred that projects in Siang Valley will not be undertaken without the consent of the people. At the same time, the objectionable projects in Tawang district and on the Siang River have still not been cancelled. While there have been no recent incidents of state-led violent repression of protests, perhaps because the entire hydropower programme was in a limbo for almost a decade, the rhetoric continues to be intolerant. Anyone who raises environmental concerns is labelled anti-development or anti-national.

This intolerance came to the fore again recently when two activists, Arunachali lawyer Ebo Mili and Assamese graffiti artist Nilim Mahanta, painted over a mural on the wall of the Civil Secretariat, the seat of the Arunachal government in Itanagar. Ebo Mili is part of a small but committed group of state-level activists that has been critical not only of the environmental impacts of hydropower development but also the dubious process of environmental governance too. They have regularly pointed out the poor quality of environmental impact assessment reports produced by third party consultants, and flagged instances when the GoAP has not upheld its own environmental laws when awarding clearances to the hydropower projects.

The mural that Mili and Mahanta painted over was of controlled water gates to depict the journey of hydropower development in Arunachal was commissioned to celebrate the 50th year of the renaming of the state. The two activists painted 'no more dams' and a sign of resistance over the mural, to protest Arunachal's hydropower programme. They were arrested for 'defacement upon a carefully curated painting at the state's expense' but later released as their arrest triggered

discussions on freedom to dissent and the pros and cons of hydropower in Arunachal.

At the time of writing this essay, the hydropower sector in Arunachal is bustling again. As of March 2022, MoAs with at least 44 private sector developers were terminated by the GoAP as they were 'not inclined to execute' projects. In an ironic turn in the Arunachali hydropower story, the GoAP gave several of these projects back to public sector undertakings, from whom these projects had been taken away about two decades back. The formalities for environmental clearances and land acquisition for several projects are likely to start soon.

In the August 2002 issue of *Seminar* on Indian Environmentalism, Harsh Sethi[11] had noted in his introduction the two opposing emergent trends 'towards foregrounding local control over local resources, often using the language of community and tradition' and 'towards integrationism and more complex structures as inevitable and thus advocate a policy of negotiation and cooperation between different stakeholders, locally, nationally and globally.'

In Arunachal, control over resources has been rightfully ceded to local communities, but the impacts of the local decisions over the forests and water resources will have resonance across scales on the urgent issues of climate change mitigation and biodiversity conservation. But the current environmental governance regime does not take adequately into account the multi-scalar and interdependent nature of environmental impacts with longer time horizon. New stakeholder groups may yet emerge when the effects of environmental change begin to be felt. Until then, it is business as usual.

11. Harsh Sethi, 'The Problem', *Seminar* 516, August 2002, pp. 12-14.

Is the Himalaya in deep crisis?

PREM DAS RAI

The Himalaya is in deep trouble. There is very little under-standing of the multiple dynamics that are in play. In this essay I will primarily try and explore the anthropogenic conditions that exist, address the emerging trends, and look at what needs to be done to mitigate the difficulties faced by the inhabitants of the region with the rapid loss of the natural biodiversity. Nature may well bounce back and regenerate, but for people inhabitating the mountains today, it will be very difficult to adapt to the rapid change.

The Himalaya is one of the most fragile and complex mountain ecosystems in the world, extending across 3,500 kilometres, through Afghanistan, Pakistan, China, India, Nepal, Bhutan, Bangladesh and Myanmar, covering an area of approximately forty two lakh square kilometres. The Indian Himalayan Region (IHR) stretches from the Pir Panjal Range in Kashmir to the eastern part of the Anjaw district in Arunachal Pradesh – the junction of India, Myanmar and China – crossing through twelve states and Union territories: Jammu and Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, parts of Assam and West Bengal. Sixteen per cent of the geographical area of India is inhabited by about fifty million people, constituting nearly four per cent of the population.

Two thousand kilometres in length and between two hundred and twenty to three hundred kilometres in width, the IHR nurtures a wide range of flora and fauna, and is one of the richest biodiversity sites in the world. It is home to over 675 edible plants, 1,743 species of which have medicinal value and also, fifty per cent of the total flowering plants in India. Many animal species are exclusive to the region, including the snow leopard, the Himalayan brown bear the red panda, the Himalayan lynx, the Kashmir stag, the Himalayan musk deer, the yak, the Himalayan ibex, the Himalayan thar, and the Himalayan bearded vulture.

The Eastern Himalaya has been identified as one of the thirty four global hotspots of biodiversity on the planet.

The IHR plays a vital role in ensuring water, energy, food, and livelihood security. The region accounts for about one-third of India's forest cover, which not only acts as a 'sink' for carbon dioxide, but also provides a multitude of goods and services, such as timber, firewood, fodder and manure for farming, all of which help support the livelihoods of people in the region. As reported in the draft document of National Mission for Sustaining the Himalayan Ecosystem (June 2010), estimates of the annual carbon sequestration by the forests of the western and north-eastern Himalaya are computed to 6.49 mt, valued at 843 million US dollars.

The region is also known as the 'water tower of the earth', encompassing over 9,000 glaciers, which are the source for major river systems such as the Indus, Ganges, Brahmaputra, Yamuna and Sutlej. These river systems provide fresh water for irrigation and drinking purposes, to over 1.4 billion people, both within the mountain ranges as well as downstream in the plains of India. The geographical characteristics of the Himalaya have defined the climate of the subcontinent. The formidable range prevents the cold and dry arctic winds from entering the subcontinent, ensuring thereby that the region stays warmer compared to other places that are located at the same latitudes. The mountain system checks and controls the moisture-bearing monsoon winds from travelling further north, facilitating the timely precipitation in the form of rain and snow in the subcontinent.

Without the Himalaya, India would have been a dry desert with a severe winter enveloped in the cold air blowing in from Central Asia. By regulating wind and monsoon circulation, the Himalaya plays an important role in sustaining agriculture and food production. The rivers and their tributaries carry enormous quantities of alluvium soil as they descend from the mountains, and deposit the soil across the Northern plains, making them one of the most fertile areas in the world. This 'Food Bowl of India', is a gift from the Himalaya.

Himalayan states that share their borders with Pakistan, Nepal, China, Bhutan, Myanmar and Bangladesh, are of great geopolitical importance in terms of national security and trade. From ancient times, these states have served as 'sentries' at the borders, a natural geographical barrier separating the Indian subcontinent from the rest of Asia. However, In the eastern and western most parts, India does not have a well demarcated boundary with China (Tibet), and border disputes there, need to be resolved.

The trans-Himalayan region has always been a key centre for trade and commerce in the ancient Silk Road, from the early Han dynasty (206 BC-8 AD). This route connected Central Asia with South Asia, and was a bridge for political, economic and cultural exchanges between India, China, Afghanistan, Nepal, and Bhutan. Today, however, there are only three open trading border posts between China and India: Nathu La (Sikkim), Shipki La (Himachal Pradesh) and Lipulekh (Uttarakhand). A robust and positive strategy in confidence building, and by improving trans-Himalayan connectivity, opening up all the passes for trade and commerce, could provide a great impetus to economic growth.

In physiographic terms, the IHR is grouped into (*a*) Western Himalaya (Jammu and Kashmir, Ladakh and Himachal Pradesh); (*b*) Central Himalaya (Uttarakhand); and (*c*) Eastern Himalaya (Darjeeling and the Northeastern states). Latitude, altitude and continentality are three key influencers of the climate across the Himalayan region. The Eastern Himalaya, which is at a relatively lower latitude, closer to the equator and the sea (Bay of Bengal), exhibits tropical influence; whereas the Western and Central Himalaya, that are located at a relatively higher latitude, exhibit a temperate influence. The combined influence, of proximity to the Bay of Bengal and the unique direction of the monsoon originating from both the Bay of Bengal and the Arabian Sea, ensures that the Eastern Himalaya receives more rainfall than Western and Central Himalaya. While the Eastern Himalaya contains some of the wettest spots on earth, a vast expanse of cold desert lies within the Western Himalaya.

Climatic variations are observed not only in different parts of the Himalaya, but also on different slopes within the same range. What is lost in latitude is made up in altitude, ensuring a myriad microclimates that harbour ecological biodiversity some still undiscovered.

Tribal communities, with their traditions and knowledge of conservation and natural resource management, have contributed immensely in maintaining the ecological diversity of the Himalaya. Eco-cultural landscapes, such as Demazong (in Sikkim) and Apatani (in Arunachal Pradesh), have a highly evolved structure of resource management that is ecologically and economically efficient (MoEF, 2009). The Khasi, Garo, and Jaintia people have a tradition of environmental conservation based on religious belief. The Nishi Tribe in the East Kameng district of Arunachal

Pradesh have established protocols for the conservation of forests around lakes and on hilltops, while the Nagas in the Mokokchung district, have historically divided their forests into blocks, of which some are designated primarily to be conserved.

The Himalaya is, additionally, a highly seismic zone buzzing with seismic activity as the Indian plate continues to be lifted by the Eurasian plate. This tectonic movement resulted in the formation of the Himalaya, the youngest, highly seismic prone, mountain range. Earthquakes continue to occur, and with a dramatic increase in populations that live in the mountain cities, these areas are disaster prone. In September 2011, an earthquake in Sikkim took many lives and caused widespread destruction to roads and property especially old monasteries and schools.

The entire Himalaya, and its inhabitants, are under severe stress – climate change induced by global warming; loss of biodiversity due to anthropogenic activity; migration of people both from the mountains to the plains and vice versa; geopolitical issues ranging from border skirmishes with China and more; as well as the influence and injection of new technologies.

There has been a rapid change in cultural values too, of what life should be in the mountains. Lifestyles and living patterns are changing with the influence of television and social media. Aspirations and changing as well. Political narratives are shifting. Tourism seems to be the new mantra, playing a core role in livelihood patterns and income generation. A new elite is being spawned in India as development funds flow in. This is bound to have a long-term impact and cost. Ranging from water shortages to a loss of ecological biodiversity that is damaged to make way for construction and infrastructure development, this destruction is bound to increase. The financial capital flow will increase and the vulnerable natural environment ravaged for immediate commercial gain. To stem this onslaught, there must be countermeasures within a legal framework in place.

To quote from an article in the magazine *Mongabay*, titled 'North India's hills are feeling the heat too, but differently', written by Archana Singh on 27 May 2022.

* India recorded the hottest March in 122 years, there has been hardly any relief from heatwave conditions.
* To seek relief from severe heat, tens of thousands of tourists either visited or are going to the hill stations in northern India, causing massive traffic jams.
* The rush of tourists from plains to hills has highlighted environmental issues plaguing the fragile Himalayas ecosystem such as water shortage and plastic pollution.
* Experts say that tourism beyond the carrying capacity of such ecologically sensitive regions could cause irreversibly harm to the fragile ecosystem of these areas.

Rishi Raj Singh, the CEO of Kaudia Estate, states, 'We are a luxury villa (Rs 85,000 per night) based out of a slightly obscure place in Kanatal (Tehri Garhwal district of Uttarakhand). We are completely sold out until June. We are forced to refuse new bookings. We have never seen this kind of demand.'

In this fast changing situation we are testing our inherent resilience. Hoteliers and travel agents are making up for what they lost during the lockdown, pandemic years of 2020 to 2021. But there is little solace in this celebration. The influx of human traffic in huge numbers is taking its toll on the region. From plastic pollution to shortages of all manner, shape and kind, have impacted the lives of local residents. All these unthinking interventions add to fossil fuel pollution. This will also cause more carbon deposits on our fragile mountain tops and glaciers, that will compel a faster melt down. It will cause major changes in the micro-climate which will then fail to support traditional practices of agriculture and horticulture. Considerable die-back diseases afflict cash crops like mandarin oranges and the large cardamom, that have been the mainstay of the people in Sikkim for centuries, diminishing production and therefore livelihoods.

Apart from all this, there are internal issues with the young population who have not been schooled as they should have. The two years of Covid lockdowns have hit our education system the most. Rural children could not access schooling and therefore their education for two years. This reality puts them back in time. No one, and especially no one in government, accepts this truth. Nothing is being done to address this need. Children are now no longer in the education system. The growing numbers of unemployed adults who are aimless and do not know where to go or what to do will soon swell in numbers. This will pose serious social and societal problems in the region compelling crime, drugs and alcoholism, finally leading to severe mental illness. Much of this is contributing to a migration from the scattered mountain villages, where many young people do not see any future in the mountains, to other parts of the country in search of learning and jobs.

In the Himalaya, infrastructure development has added many basic amenities like health clinics and

hospitals; internet; roads especially PMGSY ones; hydropower; schools and colleges, universities and the like to the area. This, on the plus side. But on the other face of the coin, the largesse of government in the form of cheap rice and pulses, support this living in the villages. The question that needs to be asked is whether any of this is leading to environmental sustainability. Ultimately, if we do not want our Himalaya to be destroyed, it is imperative that we sustain the existing and fragile ecosystems that will continue to provide the ecological services, so vital for the survival of all creatures, biodiversity and humanity. This is perhaps the central question now.

The multitude of people invading the mountains to get away from the summer heat of the plains, is altering the economic and social landscape. The rapacious character of the financial and political capital in play here, will ensure the destruction of many social systems that have helped us survive for centuries. It will change the culture of the Himalaya forever, leaving us concerned about the endless existential problems that lie ahead. The cultural and spiritual basis of our societies is being challenged in the most insidious of ways.

The development paradigm that has been unleashed over the last 75 years in the Himalaya saw that we led so-called comfortable lives, but it has come at a huge cost. We have the internet and are able to connect to the world on demand. We have running hot water in our toilets and we sleep on comfortable beds. We are able access so much more of the world and there are plenty of players who are more than eager to fulfil all our demands and aspirations. We have players like Amazon who reach us at our doorstep with a tube of toothpaste if we need it. But it comes at a cost.

We are abdicating our identity and extending our personal details and profiles into the unknown. Additionally, every convenience we indulge in leads to a greater carbon footprint. Tackling this is the real challenge. The geopolitical environment has not only deteriorated, but for the foreseeable future we seem to be in an ongoing state of tension with Tibet, China, Bhutan, Pakistan, Bangladesh and Myanmar. All that happens in our immediate neighbourhood impacts us. These are the real dangers for the Himalayan states of India.

During my growing years my father would narrate a special story to us, a story of survival. It was told to us during Maghe Sakrati (usually 14 January) – a season when tubers and roots of all kinds like sweet potato and tarul (yam) were eaten. He would tell us how the Gorkha soldiers, withdrawing from Burma during the Japanese onslaught, managed to come back alive because of their intimate knowledge of these wild foods on which they survived; even as they made their way back, traversing through thick jungles.

I served as a Member of Parliament from 2009 till 2019 in the 15th and 16th Lok Sabhas. I represented people of the state of Sikkim as a member of the Sikkim Democratic Front Party. As a lone member from a small regional outfit, it was difficult to make myself heard. Our party was aligned to the United Progressive Alliance (UPA) in the 15th Lok Sabha and to the National Democratic Alliance (NDA) in the 16th Lok Sabha. I had to skilfully use these alliances to get our party's views heard and appreciated, as well as insert the multiple voices of the people of Sikkim into parliamentary debates and discussions. Whenever there was debate on the issue of Himalaya or the mountains, I had the pleasure of bringing forth our views in the debates.

Much of the good work, as I understand it, is done outside of Parliament by taking the problems to the ministers of relevant departments like the Ministry of Environment & Forests and Climate Change; or Rural Development Department. Panchayati Raj institutions were also important as they remain the line ministries that ensure the progress on many of the fronts that we are addressing here. However, there is a real need to have an institution that will evolve and establish an inclusive, pan-Himalayan vision, to work on integrating the views and voices of the mountain states of India.

The Integrated Mountain Initiative (IMI) was one such attempt. It was registered in 2013 as a society, and has been doing stellar work for the mountain agenda.[1] Foremost in this initiative has been the organizing of mountain legislators to come together to constitute a working group focused on mountain development. This was facilitated by the then Planning Commission Deputy Chairman, Montek Ahluwalia, Thus, the disability affecting mountain areas was studied by a committee headed by B.K. Chaturvedi, Member Planning Commission of India.[2] The late Dr Tolia was a member of the committee. The Chaturvedi Report recommended that two per cent of the Gross

1. See Integrated Mountain Development (IMI) website: www.mountaininitiative.in for reports, work completed and ongoing.

2. Rita Pandey and Purnima Dasgupta, 'Development Index for Hill States in India'. Working Paper no. 2014-134. National Institute of Public Finance and Policy, New Delhi, April 2014.

Budgetary Support be given to the mountain states as an additional devolution of funds. Other such systemic approaches will enable the sustainable development of the mountains.

The Sikkim Wellbeing of Generations Bill 2017 was a far reaching state level legislation that was sought to be enacted. The preamble states, 'to establish an appropriate legal framework to guide and direct Sikkim's development agenda towards people and planetary well-being in consonance with the principles of sustainable development, integration of environmental, social and economic dimensions, inter-generational and intragenerational equity, shared responsibility, equitable conservation and efficient use of natural resources, stewardship, transparency and accountability.' Due to a variety of reasons, primarily political, it did not see the light of day.

There are other ways of assisting the Himalaya survive the onslaught of man and machine. As we find newer and better ways of dealing with the process of mobility, we have to embrace them. Electric cars will be a boon for the mountains. The initiative of 'Carbon Neutrality in the Tourism Destinations' is an outcome of the study to find out if Sikkim was carbon neutral. This was done in 2017 with data points up until 2015. The good news is that we were carbon negative then. But, the bad news was that we are sliding rapidly into becoming carbon positive. With the deluge of tourists in 2022, we can be reasonably certain that we may have already entered carbon positive territory.

Can tourism ever become carbon neutral? The strategy to decarbonise our tourism sector has to be given a boost. Stakeholders like transporters, hoteliers, homestay owners, travel agents and others have to accept that we have a massive problem do deal with. Business as usual will ruin everything and there are enough examples of ruination of destinations from around the Himalaya and in the nation at large. Once we accept this we have to find ways and means of decarbonising, which is by using renewables in our energy mix. The one thing that Sikkim and other mountain states have is hydropower. We must use this to ensure that our transporters are weaned off fossil fuels. We have to rapidly convert to electric vehicles and build charging stations.

In conclusion, I would like to say that we are at a crossroad, reaching the limits of growth in the Himalaya. The ecosystem of the Himalaya mountain range, as we know it, may not survive another century. We are, therefore, at a very critical juncture in Himalayan history. Whether we will have the foresight and the will, especially political will, to do something about this and correct the pitfalls leading to a degeneration in an effort to renew and regenerate ecosystems that have sustained us for millennia, is an open question.

When one looks at all the drivers of the change that have beset the Himalaya for the last five decades one wonders why 'development' went the way it did. If we want to unravel this problem and try and find solutions within a framework like, for example, the Sustainable Development Goals, then we will have to find a political solution. We will have to find ways to ensure a political imperative because only then, and then only, will we be able to find solutions at scale that will positively impact the Himalaya, including the restoration of its degraded and collapsed ecosystems, renewing and recharging the mountain springs for example, for a sustainable future.

Dalit pushback in Uttarakhand

RAJESH JOSHI

A MUNDANE and arduous journey made years ago on a rickety roadways bus has somehow stayed with me. To ward off sheer boredom of the long and uncomfortable trip on a scorching summer afternoon from Delhi to Uttarakhand, I got chatting with a fellow passenger in his early 60s, who was returning to his ancestral village near Berinag in Pithoragarh district to perform the annual *puja* (prayer service). He had left the hills as a teenager and was now working somewhere in Saudi Arabia. We talked about life in the mountains, the culture, language, the caste divide, and so on. Once he became comfortable chatting with a stranger who wouldn't judge him, he revealed a little family secret to me: 'We have our own code language in our extended family, which we use only when we don't want outsiders to understand what we are talking about'.

As someone who is generally interested in languages, this piqued my interest in the conversation. He said, 'The code language was spoken only in a few households belonging to our *biradari* (clan) scattered in a few villages around ours. It's different from the local Kumaoni dialect.' But he smilingly declined my request to speak a few sentences in the code language. When I insisted, he reluctantly agreed, as if feeling guilty for breaking some unwritten oath of silence. He said, 'At times, we needed to talk to our family members about things we didn't want to say in front of the *dabang* (influential and aggressive) people of the village. So, we would say – 'Yau chutukaki samani na chulapya, chulapya ta aitkari karal, thogaal'. 'Don't say anything in front of this guy, else he will get mad at us and will beat us up'.

Kumaoni is my mother tongue and I speak it with moderate fluency. But what my fellow passenger told me was completely different from the Kumaoni I speak. This sentence in Kumaoni would be – 'Yaik samani kai jhan kaiya, kaula ta yau risai jal aur marun hun bati jal.'

The man then gave me a quick crash course in his 'secret language' before abruptly stopping when he realized that he had probably revealed too much and changed the topic. Clearly, he belonged to the Dalit community and he was talking about the influential – and probably violent – upper caste people of his village. I have narrated this story from my memory to illustrate the intensity of fear and mistrust the Dalits of Uttarakhand have had for the upper caste people. This essay is an attempt to understand the great divide between these two communities in a historical context.

A separate state of Uttarakhand was carved out of Uttar Pradesh in November 2000 following a popular

mass movement that plunged the eight hill districts of Uttar Pradesh into unprecedented turmoil in the early 1990s. The stir was widely perceived to have the support of the entire hill people. This understanding was correct to an extent because the region had never before seen people from almost every walk of life – government employees, teachers, students, women and activists from the political left and right – coming out on the street to assert their demand for a separate hill state.

But the fact that a large section of Dalits – also known as *shilpkars* (artisans) in Uttarakhand – remained suspicious of the movement and stayed away from it, was completely ignored by the mainstream media as well as social commentators. No noticeable attempt has been made to analyse and understand as to why the people living on the margins of the caste hierarchy had decided against being part of what would be a watershed moment in the history of Uttarakhand. So, what were the reasons why the Scheduled Castes, Scheduled Tribes and the OBCs, who constitute nearly 40% of the total population of Uttarakhand, were not enthused by the idea of a separate hill state?

The answer can be found in the circumstances that led to the sudden eruption of people's anger. The demand for a separate hill state was not new, but it remained dormant for over six decades and could never capture the imagination of most of the people of Uttarakhand. The idea of a separate administrative unit comprising the hill districts of Kumaon and Garhwal was first floated in 1929 by a group of pro-British people of Kumaon. They submitted a memorandum to the Lieutenant Governor of the United Provinces, Malcolm Hailey, demanding autonomy for British Kumaon (Uttarakhand).[1] Since then, the demand kept cropping up intermittently but without any consequence, until 1994 when the UP government under Chief Minister Mulayam Singh Yadav decided to implement the Mandal Commission recommendations extending 27% quota for the OBCs in government jobs and an equal percentage of seats for them in state-owned educational institutions across the state.

This decision angered the predominantly upper caste populace of the hill districts. They argued that the reservation policy was suited to the caste equations of the plains where the OBCs had a sizeable population. But the same policy could not be mechanically implemented in the hill areas where the OBC population was not more than 2%. A common refrain at the height of the pro-Uttarakhand movement was: 'you give us a separate state and we will formulate our own reservation policy'. This essentially meant that the benefits recommended by the Mandal Commission could be severely diluted or altered in the new state of Uttarakhand where Brahmins and Thakurs constitute around 60% of the population.

The implicit message wrapped in this justification of a separate state was not lost on Dalits and OBCs. And the anti-reservation (read anti-Dalit) overtones of the agitation were too loud and too obvious to be ignored. Even though the upper castes themselves were benefitting from the quota system as seats were reserved in medical and engineering colleges for the students from the border areas.

Dalit leader and former (he completed his Rajya Sabha tenure on 4 July 2022) Congress Rajya Sabha MP from Almora, Pradip Tamta was among those who identified the all-pervasive anti-Dalit bias in the Uttarakhand movement right at its initial stages. As a left-leaning activist back then, Tamta, along with some other Dalit leaders, submitted a memorandum to the President of India requesting him to safeguard the interests of the Dalit community in the face of the anti-reservation fervour getting louder and louder.

Tamta recalls how a section of people associated with the Uttarakhand movement revealed their deep-seated prejudice against Dalits, who were subjected to casteist slurs and verbal humiliation during the movement. This prejudice became manifest when a march was organized in Almora to protest against Mulayam Singh Yadav's reservation policy. On the face of it, the protest was against the 27% reservation for the OBCs, but since the OBCs constitute less than 2% of the total population in the hill area, the protesters vented their anger against the idea of reservation *per se*.

While passing through the lanes of Almora town, the march stopped at a Dalit neighbourhood and the protesters started inflicting caste-related insults at the residents and shouted anti-reservation slogans to provoke the Dalits. The District Magistrate, himself a Dalit, deployed a heavy police force and managed to avert a major caste confrontation. This incident left no doubt in the minds of the Dalits that they would not be treated any better should a new state come into existence.

The Almora rally was not the only instance when anti-Dalit caste bias amongst a section of the protesters came out in the open. Slogans like 'Mulayam Singh ch***a hai, Mayawati ku***a hai' (Mulayam is a nincompoop and

1. Shekhar Pathak, Indian History Congress: Proceedings 60th Session, 1999, pp. 894-895.

Mayawati is a b***h) ranted the air during an unruly pro-Uttarakhand rally held in Delhi on 2 October 1994. What had fuelled the anger against the two leaders – then coalition partners in the UP government – was the killing of six protesters in police firing the night before in Muzaffarnagar, where the district administration stopped and harassed the protesters coming from the hills to join the planned rally in Delhi. Police were also accused of rape and molestation of some women protesters.

Dalits saw all these events as signs of an impending danger to their hard-earned constitutional right to reservation in government jobs and educational institutions. After all, these rights were a legal bulwark against oppression and harassment at the hands of caste Hindus, besides ensuring a certain degree of financial security and self-respect for Dalits. Tamta believes that government schemes and the affirmative action guaranteed by the Constitution have, to some extent, improved the economic condition of the Dalits of Uttarakhand. 'But there is hardly any change in their social status in the past several decades.'

Two incidents, which happened almost a century apart, prove Tamta's point that the attitudes of the upper castes towards Dalits have not changed much. Sample this: In 1923, a group of upper caste men stop a marriage procession of Dalits on its way from village Khandi to Sendhikhan in Garhwal, and the *baraatis* were beaten up because the bridegroom was being carried in a *dola-palki* (palanquin). When the marriage party was returning after four days, it was again attacked and looted.[2]

Almost a century later, on 2 May 2022, a group of upper caste Thakur women intercepted Dalit youth Vikram Kumar's *baraat* in Tok Majbakhali in the Salt (pronounced as Sult – it's the name of the area) *patti* of Almora district and ordered him to dismount the pony he was riding. He was allegedly warned that Kafalta would be repeated if he did not listen to Thakur women.[3] The reference to Kafalta was used as a threat because 14 Dalits participating in a marriage party were massacred by upper caste villagers in Kafalta 42 years ago in the same Salt patti in Almora district where Vikram Kumar's marriage procession was stopped this year.

The Kafalta massacre is by far the worst caste carnage in Uttarakhand. A few upper caste villagers intercepted the marriage procession of Shyam Prasad Lohar, when it was passing through Kafalta village on 9 May 1980. The villagers told the bridegroom to get down from the dola-palki and walk through the village as a 'mark of respect to lord Badrinath'. But the Dalit insisted that the bridegroom would get down from the palki in front of the temple, not before that. Their stance infuriated the upper caste people and one of them – a soldier in the army who had come home on vacation – forcibly upturned the palanquin in which the bridegroom was sitting. Clashes broke out and the Brahmin soldier was stabbed to death.

The Thakurs then turned on the Dalits, who ran to save their lives and locked themselves in a house belonging to a fellow Dalit. The upper caste villagers surrounded the house and set it on fire, burning alive six Dalits hiding inside. The rest of them jumped out of the windows but were chased and lynched one by one in the fields by the marauding crowd. The 16 accused belonging to the upper caste were exonerated by lower courts and the High Court. The Supreme Court, however, set aside the High Court's decision and sentenced all of them to life in prison 17 years after the crime was committed. 'Justice was not denied, but it was definitely delayed', reported *Outlook* magazine.[4]

Using dola-palki in marriage processions was considered a privilege exclusive to the upper caste people. The sight of a Dalit bridegroom riding a pony or using dola-palki has always irked the upper castes – they see it as an attempt by the Dalits to disrupt the well established vertical social order. It is also seen as their rejection of Brahminical hierarchies and reclaiming their place in society as equals. Paradoxically, caste Hindus had no problems with Christians and Muslims using dola-palki in their marriage processions![5]

Socially aware sections of the Dalit community began to resent the restriction on using dola-palki in their marriage parties. In fact, three years before the1923 attack on the marriage procession in Sendhikhal, Dalit leader Khushi Ram Arya had for the first time dared to break that unwritten diktat of the upper castes and insisted on using dola-palki in a baraat in Ramgarh village on 16 January 1920.That proved to be a morale booster for the Dalits fighting for their rights elsewhere in Uttarakhand.[6] Jayanand

2. Shantan Singh Negi, Indian History Congress: Proceedings 72nd Session, 2011, pp. 783.

3. *Times of India*. https://timesofindia.indiatimes.com/city/dehradun/dalit-groom-told-to-get-off-horse-or-see-baraatis-die/articleshow/91329138.cms

4. Rajesh Joshi, *Outlook*, 26 March 1997. https://www.outlookindia.com/magazine/story/victory-to-the-voiceless/203265

5. Shiv Prasad Dabral, *Uttarakhand ka Itihas* (Vol 8). Vira Gatha Prakashan, 1978 (1965), p. 349.

6. Shantan Singh Negi, Indian History Congress: Proceedings, 72nd Session, 2011, p. 783.

Bharati, an influential Dalit leader of Garhwal, started mobilizing his community in1923 to demand the right to use dola-palki. It is ironic, however, that he was still fighting for this right almost 20 years later, in 1941, after yet another attack on a Dalit marriage procession in Mandoli village in Garhwal, even though the Allahabad High Court had in 1936 outlawed the practice of stopping the shilpkars from using dola-palki.

Shilpkars started becoming restless about their social conditions right at the beginning of the 20th century. Hari Prasad Tamta was amongst the first pro-British shilpkar leaders who founded the Tamta Sudhar Sabha in Almora in 1905, which later came to be known as the Kumaon Shilpkar Sabha. Hari Prasad Tamta and Khushi Ram Arya were amongst the pioneers of the Dalit awakening in the Kumaon region. Khushi Ram is remembered for organizing Kurmanchali Shilpkar Sammelan in 1923 in Majhkhali, Almora, where shilpkars demanded, among other things, free education, access to jobs in police and army, and their share in the government. It was much later, in 1935, that shilpkars were allowed to join the armed forces. Interestingly, both Dalits and Brahmins were not initially considered 'martial races' by the British, hence they were denied entry into the army.

Given the rigid social system controlled by the upper castes, it is remarkable how a community was slowly waking up to assert its rights and garner courage to challenge the system. This awakening was to a large extent linked with the national awakening against colonial rule under the leadership of Mahatma Gandhi. A host of pro-Dalit organizations like the Antyaj Sudhar Sabha and the Shilpkar Sudhar Sabha came into existence in the early part of the 20th century. Despite all this, attacks on Dalit marriage parties kept happening from the 1920s through to the1940s, and in fact they have not completely stopped right up to the present day.

It is also very interesting to note that while the Dalit leadership was watching the mass movements around them during the colonial period with a lot of curiosity, they somehow were not ready to trust the upper caste leadership of some of the progressive and anti-colonial movements. Historian Shekhar Pathak notes that 'during the movement to abolish the *begaar* system (forced and unpaid labour) and the forest movement, the shilpkars were not inspired by the leadership to participate in it.'

The begaar system introduced by the British, forced the villagers to carry heavy luggage like tents, commodes, and containers of food items on their back from one village to another to set up camping facilities for the British officials travelling in the interior parts of Uttarakhand. The villagers resented the practice and finally, in 1921, they launched the historic anti-begaar movement in Bageshwar under the joint leadership of Brahmins and Thakurs. But the shilpkars kept away from it because they could clearly see the dichotomy of the upper caste people who, on the one hand, were protesting against the begaar system of which they themselves were the victims, but on the other hand, they would force the Dalits to do begaar on their fields for free.[7] The same dichotomy was on full display during the Uttarakhand movement and Dalits could see through it.

Though shilpkars were considered part of the *varnashrama* system, they were still treated as 'outsiders' by upper caste Hindus. They were not allowed to follow any of the rituals and customs that Hindus follow at the time of birth, death or marriage. High caste priests would not perform any religious rites for them; they were prohibited from wearing the *janeu* (the sacred thread) worn by upper caste Hindus; they were not allowed to enter a temple or even look at the deity for a long time from close quarters, nor were they allowed to give their children decent, modern names.

But shilpkars devised a way around this socio-religious strangling by upper caste Hindus. They took a bold step and gradually developed a priest class from within the Dalit community. The thinking behind the move was to outsmart Brahmin priests and plainly tell them – 'we don't need you to perform our religious rites; we can do it ourselves'. Dalit *purohits* (priests) learnt Sanskrit and memorized the scriptures, and even dressed up like Brahmin purohits. A Dalit carpenter, Joga Ram, became a priest in Bageshwar district way back in 1960, and now his sons follow in his footsteps. They perform rituals for Dalit families and they are addressed as *Panditji* (an honorific reserved for Brahmins) by the community.[8] The shilpkar community's struggle for equal religious rights was thus a struggle for democratic values and basic human rights which they had been denied for centuries.

In the early part of the 20th century, the Arya Samaj movement played an important role in mobilizing the shilpkars to stake claim over

7. Shekhar Pathak quotes Pre-Mutiny records, Kumaon, IV, 1815, Volume 111;101 and Glyn's Report on Slavery in Kumaon, PMR, Kumaon Records XXII, 1822, 65-96 to illustrate that the oppressive *begaar* and *halia* system (in which Dalits were compelled to plough the fields of the upper caste people) continued.

8. *Indian Express*, 4 June 2013. https://indianexpress.com/article/news-archive/web/in-uttarakhand-dalits-create-own-priesthood/

Hindu religious symbols like the sacred thread – janeu. Thread ceremonies were organised in different parts of Uttarakhand to baptize shilpkar men and they were given the caste name 'Arya' to announce their membership of the grand Arya Samaj family. Congress and Arya Samaj leader Lala Lajpat Rai came to Sunkia village in Nainital district in 1913 to participate in such a ceremony organized by shilpkar leader Khushi Ram Arya. His visit had surely stirred the conscience of some of the upper caste intellectuals who began to voice their concern about the subhuman treatment of the shilpkars by caste Hindus. However, they were seemingly more concerned about the shilpkars converting to Christianity or Islam.

Pathak quotes from two important newspapers of that time – *Almora Akhbar* and *Garhwali*. Tara Dutt Gairola wrote in Almora Akhbar: 'We must change our attitude towards the Shilpkars. The government must also work for their upliftment. Otherwise, they will become Christians and Muslims, and this will destroy the Hindu unity.' An editorial published in 'Garhwali' in April 1913, noted: 'We must behave with the lower castes properly and minimize the gulf between us. We must not hate them and try to inspire them for (their) social upliftment… If the number of people belonging to lower castes goes down, there is no hesitation in saying that India will be without hands and feet.'

Clearly, shilpkars were looked at as mere utility tools to serve the dominant castes – 'hands and feet of the Hindu society' – and not as fellow human beings enjoying equal rights. But by now, the shilpkars were getting increasingly restless about the perpetual discrimination against them. Hari Prasad Tamta wrote a scathing article in the District Gazette in1923, lamenting the plight of the shilpkars: 'Centuries have passed. We sacrificed ourselves for the Hindu religion, but justice was never done to us. We are still called "Dom" even our shade is supposed to be untouchable.'[9]

Even a century later, the discriminatory attitude of the dominant castes towards the Dalits has remained unchanged – it may have become more subtle though. What has really changed is that Dalits are no more willing to meekly accept the rules of the game set by the upper castes – they are pushing back. A recent example of Dalit assertion grabbed the national headlines in December 2021 when upper caste students in a government school in Champawat district refused to eat a midday meal cooked by a Dalit employee, Sunita Kumari. Under pressure from the dominant castes, the school management sacked her and appointed a Brahmin woman as *bhojanmata* (mother cook). What followed was unprecedented: In a tit-for-tat action, the Dalit students decided to boycott the midday meal cooked by the newly appointed Brahmin woman.[10]

This may be a one-off example of reverse untouchability, but the message was clear: If the dominant castes can practice untouchability, Dalits will also pay them back in their own coin. The younger generation of Dalits do not need to invent a code language anymore to communicate amongst themselves to escape the wrath of the upper caste.

9. Shekhar Pathak, Indian History Congress: Proceedings, 64th session, 2003, pp. 843-844.

10. Hindustan Times, 26 December 2021. https://www.hindustantimes.com/india-news/now-dalit-students-refuse-to-have-midday-meals-cooked-by-woman-from-upper-caste-at-uttarakhand-school-101640455170987.html

Books

GOVERNING THE 'WATER TOWER' OF ASIA: The Case for a System of Integrated Knowledge for the Hindu Kush Himalaya by Jayanta Bandyopadhyay and Sayanangshu Modak. Observer Research Foundation, New Delhi, March 2022.

THE Hindu Kush Himalaya (HKH) is the planet's highest and one of the longest mountain chains. This geologically young mountain range begins in Myanmar and stretches up to Afghanistan, a distance of 3,500 km. From a few hundred metres above sea level along the Indo-Gangetic plains, the HKH's elevation rises above the average 8000+m mountains in the north in a crow flying distance of 150-200 km and then towards the north descends to an average 4000+m of the Tibetan Plateau.

The basins contain a mosaic of highly diverse climate, ecology, hydrology, cultures, faiths, and political regimes, with countries at different stages of development and political power. Given the extreme diversity of this large canvass, why did the authors attempt to bring them together in the monograph? According to the authors, all these basins face two common critical challenges. First, the availability of freshwater, both for ecosystem conservation and for meeting people's needs, is facing a massive crisis. This, the authors argue, is an outcome of the prevailing practices of water development and management, based on the reductionist perspective of engineering for economic and commercial gains.

Extreme floods, droughts, snow depletion, and glacial lake outburst floods are already increasing in the HKH. The basic premise of this monograph is that the business-as-usual approaches under the prevailing paradigm – to develop, use and manage water cannot address deteriorating conditions of the rivers and their emerging challenges. Successful responses, the authors contend, need to come from developing a system of integrated knowledge that requires the creative synthesis and assimilation of natural and social sciences, including indigenous and local practices of water and natural resource use.

The risks of climate change caused droughts certainly must be part of the wider conversation in South Asia where rivers already face pressures from multiple demands and rising pollution from solid and liquid wastes that turn them into sewers. Urbanization in the region has become synonymous with the haphazard concretization of open spaces, flood plains, wetlands, and water bodies as well as expropriation of spaces that naturally belong to rivers. Floods and inundations are now regular features in both cities and the villages. Embankments regularly breach, they do not provide security from floods.

Though the challenges are highlighted and discussed in some quarters, in the HKH region the march of the hydraulic mission, through the building of dams, inter-basin transfers, pump storage schemes, and river linking projects continues. In practical terms, this paradigm involves the construction of a physical structure (a dam, weir, or barrage) at a river section to modify the stock and flow of the flowing freshwater body in both space and time for meeting objectives defined by the centralized bureaucracy. In this scheme of things, the upstream watershed, river geomorphology, aquatic lives, water quality, and sediment pulses naturally inherent in a river are compartmentalized into discrete and separable components. This deliberate discretization of flowing freshwater, a partial knowledge to suit political ends has been the foundation of the paradigm under which modern management is pursued, and perhaps one of the leading causes of freshwater degradation highlighted by the authors.

The authors refer to the in-ground conditions and remind readers that very few examples provide a clear-cut way forward for integrated management. They offer a way out by reminding that rivers are a combination of interrelated and inseparable components: water flow, energy, biodiversity, and sediment, represented by the acronym WEBS. Unfortunately, to meet political imperatives this combination has been made discrete and this conceptual oversight has remained unquestioned for long. The authors propose the indivisibility of rivers embodied in WEBS as a guiding framework for

* https://www.orfonline.org/research/governing-the-water-tower-of-asia/

developing a system of integrative and foundational knowledge.

Flowing rivers are part of the cycle that has connected oceans, clouds, and land as part of the natural ecosystem for hundreds of thousands of years. In the last 150 years, however, human interventions have altered natural hydrology and our challenges are to balance water's sources, uses, and users, while respecting the indivisibility of the hydrology cycle, and systematically restoring it. The development of a system of integrated knowledge also must accompany recrafting of the education stream and fostering these qualities for a healthy learning environment.

The authors remind us that collectively developing system integrative water knowledge can be the starting point for stewarding HKH's rivers as well as for a healthier and balanced future. The region's social and political collective, particularly in South Asia, needs to pause and reflect on what might be an appropriate approach for the long-term health of HKH. Simply, unquestioned transposing of a model of development pursued elsewhere on the fragile HKH landscape facing runaway climate change impacts will exacerbate water crisis in the basin countries and jeopardize the well-being of millions. They present new perspectives on flowing freshwater that backed by new integrative water knowledge can help begin a water journey in harmony with nature and human needs.

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THE CHIPKO MOVEMENT: A People's History by Shekhar Pathak. Permanent Black, Delhi, 2020.

IT was probably in the year 1990 that Ramchandra Guha's *The Unquiet Woods* introduced me to the Chipko Andolan (1973-1981). Chipko was, according to Guha, primarily a movement of resistance of the peasants of Uttarakhand against over-exploitation of the forest/natural resources by the government and its agents – the contractors.

Forests are integral to the economy of the people because they are the source of fodder and nutrition of the soil as well as timber which for the local population has both commercial and domestic use. In short, forests provide sustenance and means of livelihood to the people; they have also played a major part in the shaping of the social systems and cultural identities of the local people.

A major concern in the ecologically fragile region of the Himalaya has been the extensive degradation of forests including changes in tree species. Over-exploitation of natural resources by the colonial masters had resulted in frequent natural calamities. Recurrence of floods and landslides jeopardized both the survival and livelihoods of the local population. The inhabitants of the region felt the need to restore the natural forest cover as the local economy was primarily based on the forest and its wealth. The shrinking of forests meant the shrinking of economic opportunities and employment.

The Chipko movement conveyed different connotations to different sects of people, as different narratives soon emerged. The feminists saw the movement essentially as a women's movement. To the environmentalists it was an ecological movement. Sarvodaya activists saw in the movement a non-violent struggle based on Gandhian principles. Each narrative interpreted Chipko from its specific ideological standpoint and attempted to fit it into its specific ideological framework with a definitive aim to accommodate Chipko to the ongoing global discourses on feminism and environmentalism.

Shekhar Pathak needs no introduction in academic circles, particularly to scholars interested in history and environment. Born and brought up in the Kumaon region of Uttarakhand, he is proficient in the local languages, has an understanding of the lives and psyche of the people of the region. He has chronicled a detailed account of the movement since its genesis to its decline, covering the various stages of its evolution.

In the preface of his book, Professor Pathak admits the same when he points to the appearance of several distorted versions of events and people connected with the movement, proliferation of erroneous and half-baked conclusions and misrepresentations mainly because of a lack of knowledge of ground realities by scholars. It was against these attempts to distort Chipko and counter the projection of the 'media made Chipko', full of deceits and lies, that Pathak determinedly presents the 'actual Chipko' in his book in its true historical perspective.

Towards the closing years of the '70s of the last century, 'the ecological and feminist forms of the Chipko was invented', writes Pathak. Bahuguna and Vandana Shiva became its propagators and philosophers. Deep ecology was connected to the Chipko movement and the thesis of eco-feminism was forcibly imposed by linking the theory of patriarchal exploitation of nature and women on Chipko. This, according

to Shekhar Pathak, was a deliberate attempt to push the movement further from its original objective which was 'to make the forests the centre of a decentralized economy based on prudent use and the generation of local employment.' (pp. 260-261)

Pathak's book, aims to restore Chipko in its actual framework of time and place. The work supported by extensive ground level research combined with an examination of available official records and private papers, claims to shatter the 'floated myths' and to bring back the 'flouted realities' of the movement. With equal emphasis the book presents the existing narratives on Chipko quoting references to substantiate them.

The most publicized Gandhian narrative of Chipko, which is also the one most preferred by the media, describes the movement as nonviolent resistance spearheaded mainly by Sarvodaya activists. The book reveals the involvement of Communist Party members in the movement about which there is almost no mention in the popular Chipko literature. In fact, it is interesting to know that the Communist Party of India (CPI) was the first political organization to raise the forest question as early as in 1967. 'The real wealth of Uttarakhand, its forests, were been plundered by the rich and the state; they should be given over to the villagers to manage.' Its members further demanded the abolition of the existing system of auction of forests to outside contractors, urging instead that forest land be handed over at concessional rates for economic use to the local communities. (p. 81) Chipko activists collaborated with the CPI in areas where they were influential – for example in the Joshimath region where the Sarvodaya had not reached. (p. 114)

An understanding of the Chipko remains incomplete without comprehending the split within the movement which ultimately divided it into three streams with three distinctly strands. Shekhar Pathak's book explains each of the three group's ideologies, their actions with unbiased emphasis because according to him these three groups, taken collectively, constitute Chipko in its totality.

The year 1980 was significant in the history of forest agitations as the Forest Conservation Act (1980) was implemented all over India. The prerogative that Star Paper Mills had hitherto enjoyed to procure timber from the forests of Uttarakhand came to an end and a ban was announced on the felling of green trees for the next fifteen years in forests over an altitude of 1000 metres. However, Pathak points out that it was during this time it became clear that 'a schism was developing within the Chipko.'

At the national level, a split had surfaced in the Sarvodaya movement due to Jayaprakash Narayan's opposition to the Emergency and Vinoba Bhave's support to it. This divide in turn, resulted in splitting the Sarvodaya movement in Uttarakhand into two – one represented by Chandi Prasad Bhatt and the other by Sunderlal Bahuguna.

Uttarakhand Sangharsh Vahini founded in 1977, aimed at the overall development of Uttarakhand represented the third stream of Chipko. Among its founders were Chandi Prasad Bhatt, Shamsher Bisht and Kunwar Prasun, among many others. (p. 166) Sunderlal Bahuguna kept himself away from this organization though many of its members were social activists connected with Chipko. In the 1980s this group deviated from its early stand of keeping itself distant from political activities and assumed a clear political and militant character.

The first and the second stream of Chipko earned several national and global acclamations, their leaders received awards and honours on national and global levels but the third stream, more radical in approach than the first two, did not receive any award. (p. 250)

Another myth associated with Chipko refuted by Pathak is the attempt to add a 'spurious religious flavour' to Chipko by connecting it to Bishnoi folklore which speaks of protecting trees by hugging them. Even Bahuguna projected this Bishnoi tradition to explain the origin of Chipko. (p. 256) Pathak rejects the story as a legend and points to the fact that this story was not known in Uttarakhand until the 1980s.

The most important chapter is 'The Structure of a Social Movement', because it justifies the author's claim to reconstruct Chipko rooted in reality, based on empirical evidence, to 'provide a more accurate and grounded account of the origins and articulation of the movement.' In order to connect it to contemporary ground reality, Pathak makes a thorough analysis of the leadership and the organization of Chipko, probes the ideologies it propagated and why, their capabilities, the socio-economic background of leaders to understand their personalities and psyche, what compelled them to join the movement, their perceptions and intentions, if at any stage of the movement they underwent a change and if so, under what circumstances.

This book has relieved the ideological burden that was submerged under the facts. It provides an opportunity to those rural women who created the people's history of Chipko.

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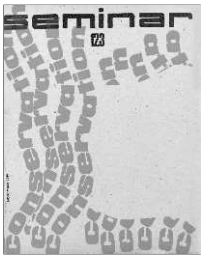
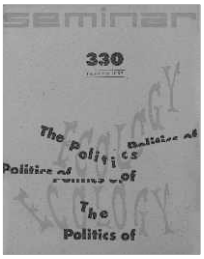
seminar with a critical edge...



123, November 1969

Conservation
a symposium on
the rational utilization
of our natural resources

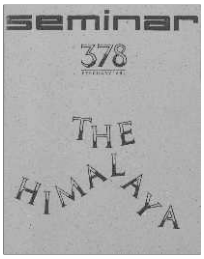


330, February 1987

The Politics of Ecology
a symposium on
the dangers of
unthinking development

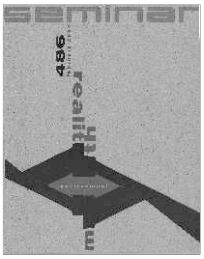
355, March 1989

New Social Movements
a symposium on
a growing response to
the crisis in society



378, February 1981

The Himalaya
a symposium on
the problems of
a mountainous terrain

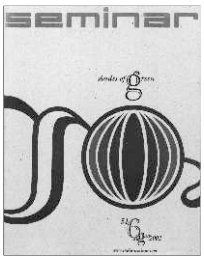


486, February 2000

Environment: Myth & Reality
a symposium on
re-evaluating some
prevailing beliefs

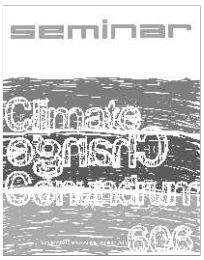
492, August 2000

Protecting Nature
a symposium on
some legal issues
concerning the environment



516, August 2002

Shades of Green
a symposium on
the changing contours of
Indian environmentalism

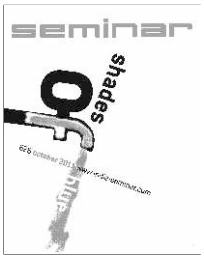


606, February 2010

Climate Change Conundrum
a symposium on
global efforts towards
sustainability in development

613, September 2010

Nature Without Borders
a symposium on
innovative approaches to
conserving nature and wildlife

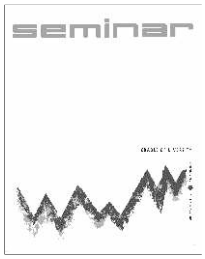


626, October 2011

Shades of Blue
a symposium on
emerging conflicts
and challenges around water

690, February 2017

Nature's Present
a symposium on
understanding conflict around
nature in contemporary India



735, November 2020

Cradle of Diversity
a symposium on
the present and future
of the Western Ghats